ORDER NO. MD9505050C3

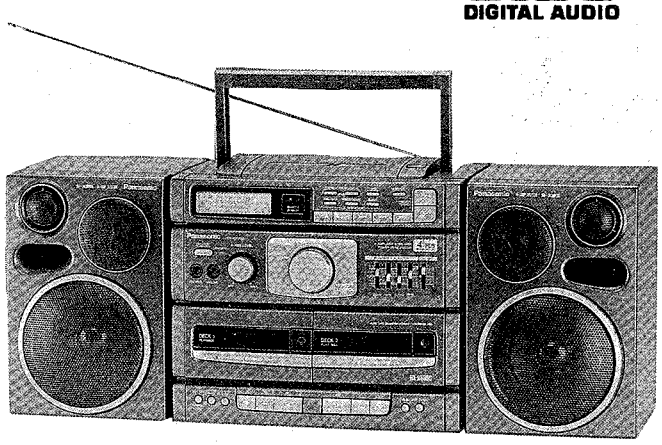
Service Manual

MASH* multi-stage noise shaping

COMPACT disc DIGITAL AUDIO

Portable Stereo Component CD System

RX-DT690



Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(GC)	Asia, Latin America, Middle Near East and Africa	(K)

* MASH is a trademark of NTT.

TAPE DECK : AR300 MECHANISM SERIES
TRAVERSE DECK : RAE0113Z MECHANISM SERIES

■ Specifications

■ RADIO

Frequency range

FM	87.5 – 108.0 MHz (50kHz steps)
MW	531.0 – 1602.0 kHz (9kHZ steps)
	530 – 1600 kHz (10kHz steps)
SW	3.2 – 7.3 MHz
	9.5 – 21.85 MHz
Intermediate Frequency	
FM	10.7 MHz
AM	450 kHz
Sensitivity	
FM	10 dB/50 mW
MW	53 dB/m/50 mW
SW (3.2 – 7.3MHz)	54 dB/m/50 mW
SW (9.5 – 21.85MHz)	31 dB/50 mW

■ CD PLAYER

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source	Semiconductor laser (wavelength 780 nm)
No. of channels	2 channels, stereo
Frequency Response	20 Hz – 20 kHz(+1, –2 dB)
S/N ratio	77 dB
Wow and flutter	Less than possible measurement data
D/A converter	MASH (1 bit DAC)

■ TAPE RECORDER

Track system	4 track, 2 channel, stereo
Recording system	AC bias
Erasing system	AC erase
Monitor system	Variable sound monitor
Frequency range	
Normal	20 – 16000 Hz
CrO_2	20 – 17000 Hz

■ GENERAL

Power requirement	
AC	110 – 127 V/200 – 220 V/230 – 250 V, 50/60Hz
	Power consumption: 80 W
Battery	15V (Ten R20/LR20 size, "UM-1" batteries)
Memory back-up for computer/clock	6V (Four R6/LR6 size, UM-3 batteries)
Power Output	200 W (75 W x 2 + 25 W x 2)...PMPO
Speakers	2 Woofers; 1.5cm
	2 Squawkers; 8cm
	2 Tweeters; 12cm
Jacks	
Input	MIX MIC; ∅3.5, 600Ω
Output	Speakers; LOW (6 – 16 Ω)
	HIGH (6 – 16 Ω)
	Phones; 32 Ω
Dimensions (W x H x D)	642 x 267 x 231 mm
	Main unit; 313 x 267 x 231 mm
	Speaker box; 174 x 254 x 190 mm
Weight	9 kg without batteries

Notes :
Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the gerenal public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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■ Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector. Use a minus(-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.
(If the power supply in your area is 117V or 120V, set to the "127V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

■ Precaution of Laser Diode

CAUTION : This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens.
Wavelength : 780 nm
Maximum output radiation power from pick up : 100 μW/VDE

Laser radiation from pick up unit is safety level, but be sure the followings:

1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge : 780nm
Maximale strahlungsleistung der lasereinheit :100μW/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

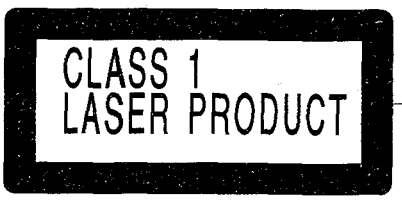
1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werkseitig justierten einstellregler der lasereinhit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

ADVARSEL: I dette a apparat anvendes laser.

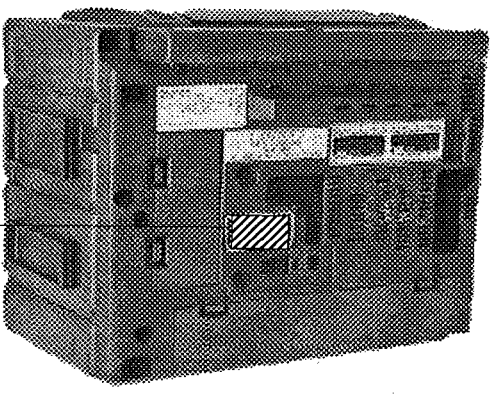
CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Use of Caution Labels

RQT4389ZAA



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



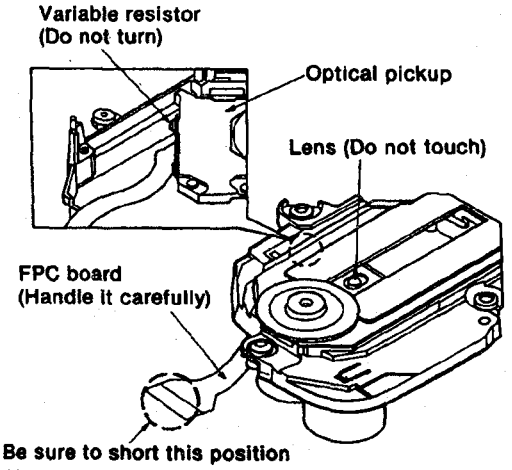
DANGER	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDEAF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN. RQLS0119

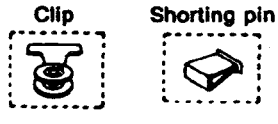
■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

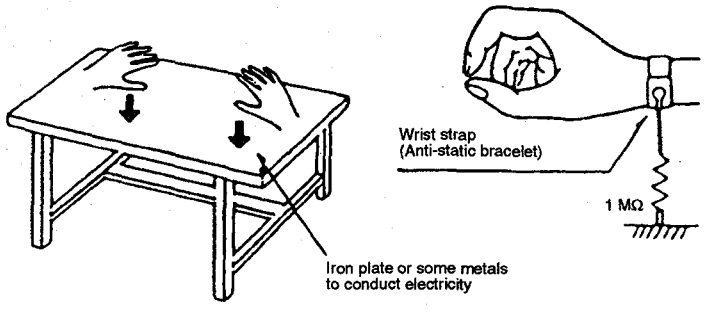




• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ Operation Checks and Main Component Replacement Procedures

Warning : This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG : • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.
4. Refer the Parts No. on the page of "Main Component Replacement Procedures", if necessary.

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page

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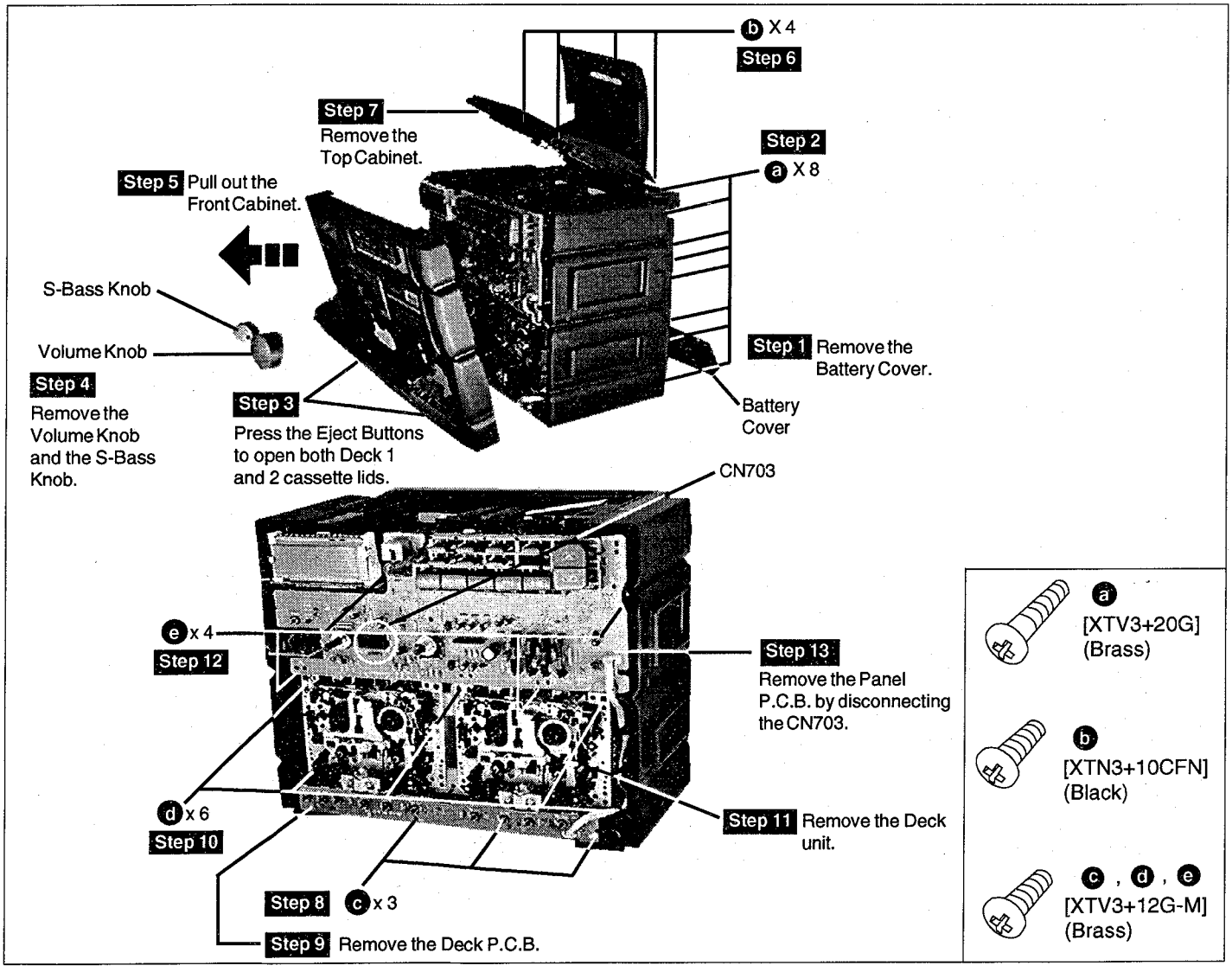
■ Disassembly of the Front Cabinet, Top Cabinet, Deck P.C.B. , Deck Unit and Panel P.C.B.

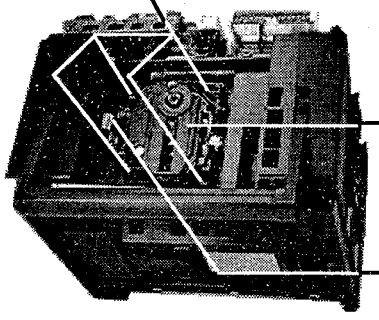


■ Checking Procedure for each major P.C.B.

1. Checking of the Servo P.C.B.

Step 1 Disassemble the Front Cabinet and Top Cabinet (Step 1 ~ 7 on page 4).

Step 2 ⓐ X 4

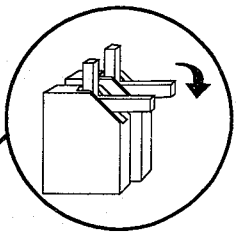


Step 3 Pull out the FPC cable

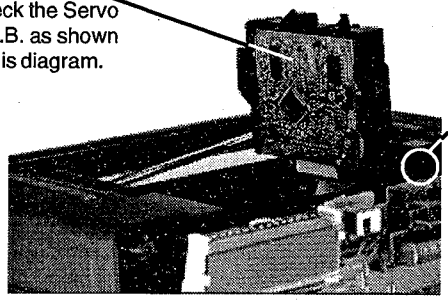
Step 4 Position the CD unit as shown in the diagram on the right.

Step 5 Connect back the FPC cable.

Step 6 Push down in order to operate the CD unit.



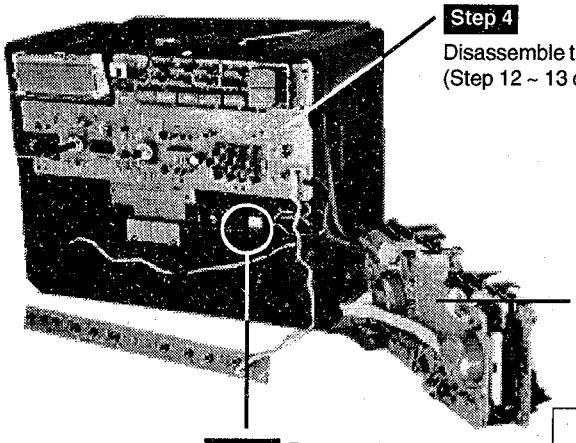
Step 7 Check the Servo P.C.B. as shown in this diagram.



ⓐ [XTV3+12G-M] (Brass)

2. Checking of the Mechanism P.C.B. and Main P.C.B.

Step 1 Disassemble the Front Cabinet, Top Cabinet, Deck P.C.B. and Deck Unit (Step 1 ~ 11 on page 4).



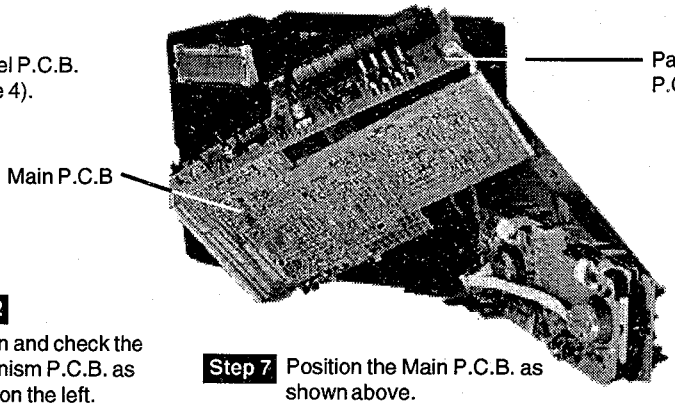
Step 2 Position and check the Mechanism P.C.B. as shown on the left.

Step 3 Remove the connection CP901.

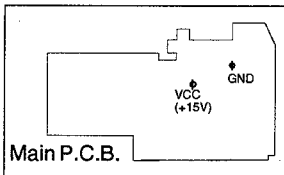
Step 4 Disassemble the Panel P.C.B. (Step 12 ~ 13 on page 4).

Step 5 Slide out the Main P.C.B.

Step 6 Replace back the connection CP901 and connect the Control P.C.B. and the Main P.C.B. together.

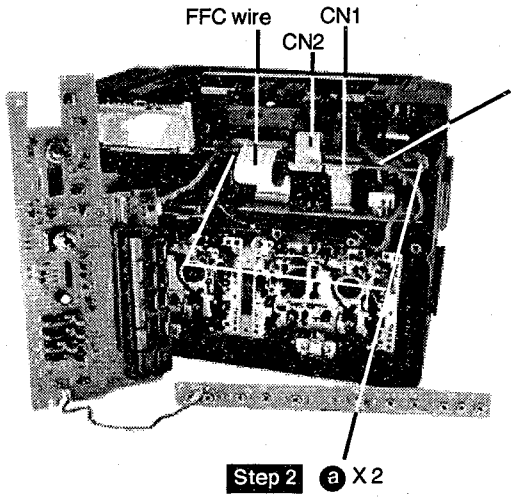


Step 7 Position the Main P.C.B. as shown above.



REFERENCE
The Main P.C.B. is able to perform the circuit check by itself (without other P.C.B.) when a source of +15V is supplied.

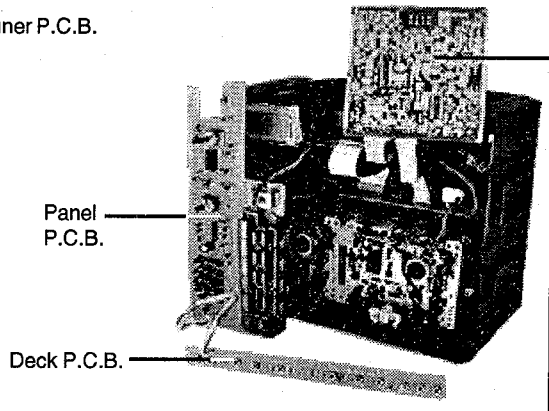
3. Checking of the Tuner P.C.B.



Step 2 ⓐ X 2

Step 1 Disassemble the Front Cabinet, Top Cabinet, Deck P.C.B. and Panel P.C.B. (Step 1~13 on page 4).

Step 3 Disconnect the FFC wire, CN1 and CN2.



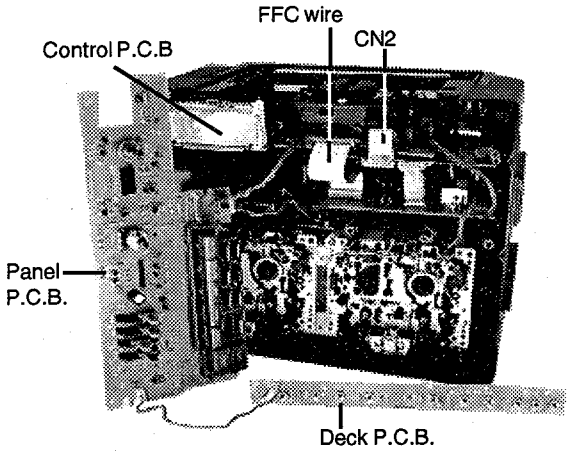
Step 4 Position the Tuner P.C.B. as shown in the diagram and connect back the FFC wire, CN1 and CN2.

ⓐ [XTWS3+10Q] (Brass)

4. Checking of the Control P.C.B.

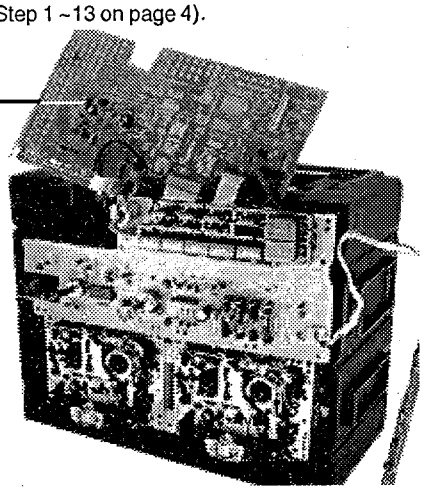
Step 1 Disassemble the Front Cabinet, Top Cabinet, Deck P.C.B. and Panel P.C.B. (Step 1 ~13 on page 4).

Step 2 Disconnect the FFC wire and CN2.



Step 3
Position the Control P.C.B. as shown on the right.

Step 4
Connect back the FFC wire and CN2. Place the Panel P.C.B. back to its original place.



NOTE:

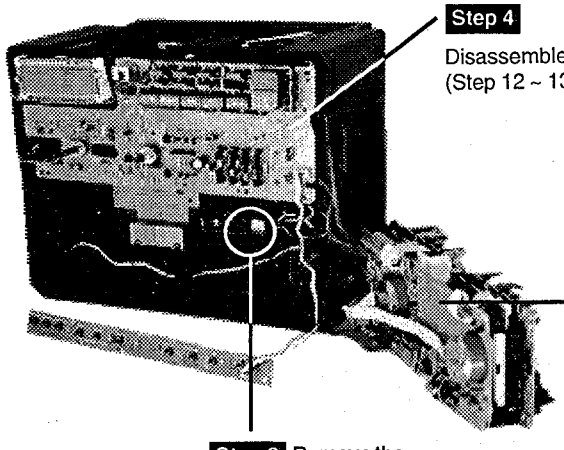
- For checking CD related circuit
  Self diagnostic function is able to check and indicate error-code for the following symptom
  1) Power supply failure ..... U01 or U02
  2) CD traverse reset switch problem ... F15
- To check CD control command
  MDATA, MCLK, MLD, SENSE etc are able to check at CD servo circuit connector CN702 through the procedure of 'Checking of the Servo P.C.B.' (page 5).
- To check the Control P.C.B. for CD operation
  Use some stands to hold the CD unit when connecting to the Control P.C.B.

■ Main Component Replacement Procedure

1. Replacement of Power Amplifier ICs and Regulator IC

Step 1 Disassemble the Front Cabinet, Top Cabinet, Deck P.C.B. and Deck Unit (page 4). (Step 1 ~ 11 on page 4).

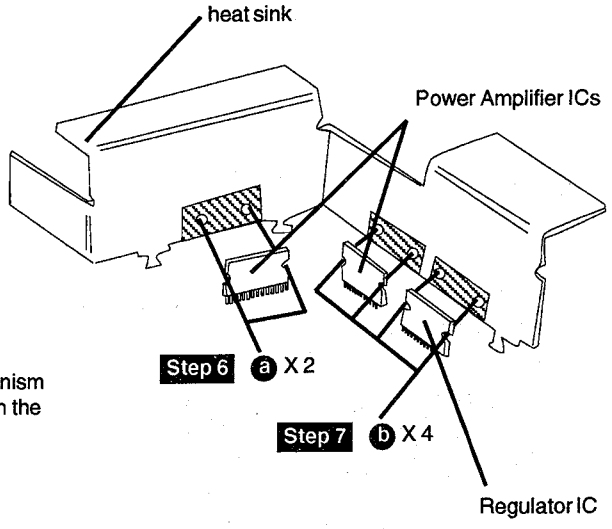
Step 4
Disassemble the Panel P.C.B. (Step 12 ~ 13 on page 4).



Step 2
Position the Mechanism P.C.B. as shown on the left.

Step 3 Remove the connection CP901.

Step 5 Slide out the Main P.C.B.

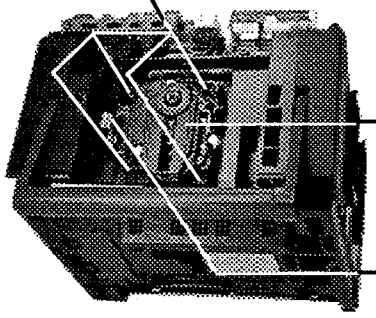


ⓐ , ⓑ
[XTW3+10F]
(Brass)

2. Replacement of the Traverse Deck

Step 1 Disassemble the Front Cabinet and Top Cabinet (Step 1 ~ 7 on page 4).

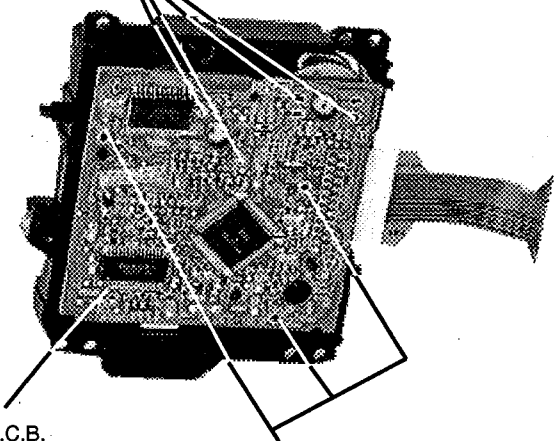
Step 2 ⓐ X 4



Step 4
Take out the CD unit.

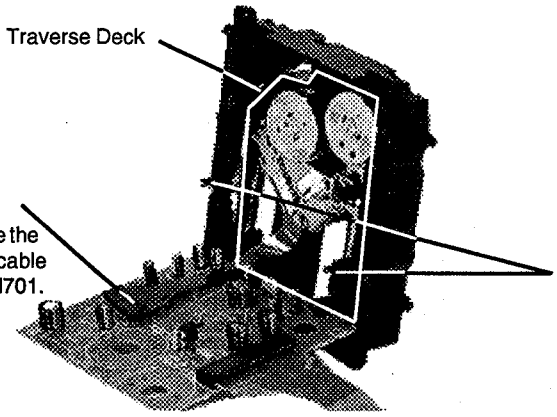
Step 3
Pull out the FPC cable

Step 6 Desolder the 4 motor legs.

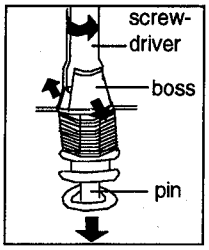


Servo P.C.B.

Step 5 ⓑ X 3



Step 7
Remove the flexible cable from CN701.



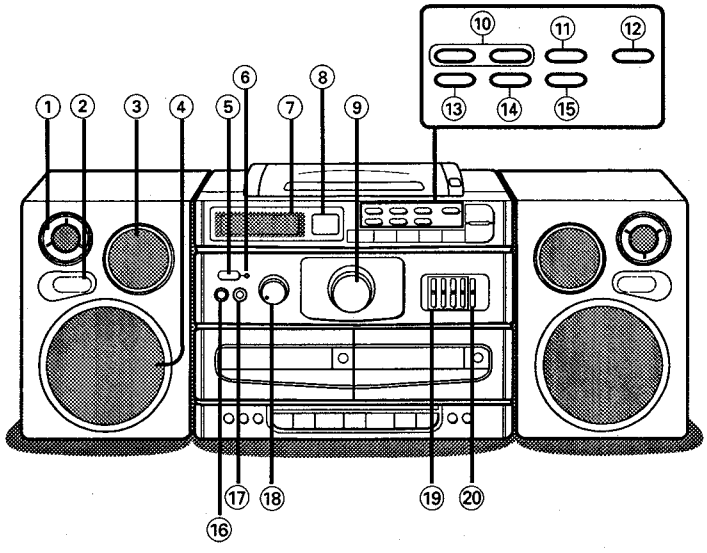
Step 8
Widen the 2 bosses with a screwdriver and pull out the 2 pins. Then remove the Traverse Deck.

ⓐ [XTV3+12G-M] (Brass)

ⓑ [XTV2+6G] (Brass)

■ LOCATION OF CONTROLS

Basic controls



① **Speakers (Tweeter)**
② **Bass reflex ports**
③ **Speakers (Squawker)**
④ **Speakers (Woofer)**
⑤ **Power "Standby ⏻" switch (POWER STANDBY ⏻)**
Press to switch the unit from on to standby mode or vice versa, in standby mode, the unit is still consuming a small amount of power.
⑥ **Standby indicator (STANDBY ⏻)**
When the unit is connected to the AC mains supply, this indicator lights up in the standby mode and goes out when the unit is turned on.
⑦ **Display panel**
⑧ **Remote control signal sensor (REMOTE SENSOR)**
⑨ **Volume control knob (VOLUME)**
⑩ **Time set buttons (–/TUNING/ TIME SEARCH/+)**
⑪ **Timer set button (TIMER)**
⑫ **FM mode/Beat proof button (FM MODE/B.P)**
⑬ **Time check button (TIME CHECK)**
⑭ **Memory/Time adjust button (MEMORY/ADJUST)**
⑮ **Sleep timer button (SLEEP)**
⑯ **Headphones jack (PHONES)**
⑰ **Mixing microphone jack (MIX.MIC)**
⑱ **Super Extra Bass System control (S-XBS LEVEL)**
⑲ **Graphic Equalizer Controls (GRAPHIC EQUALIZER)**
⑳ **Balance control (BALANCE)**

Tuner controls A

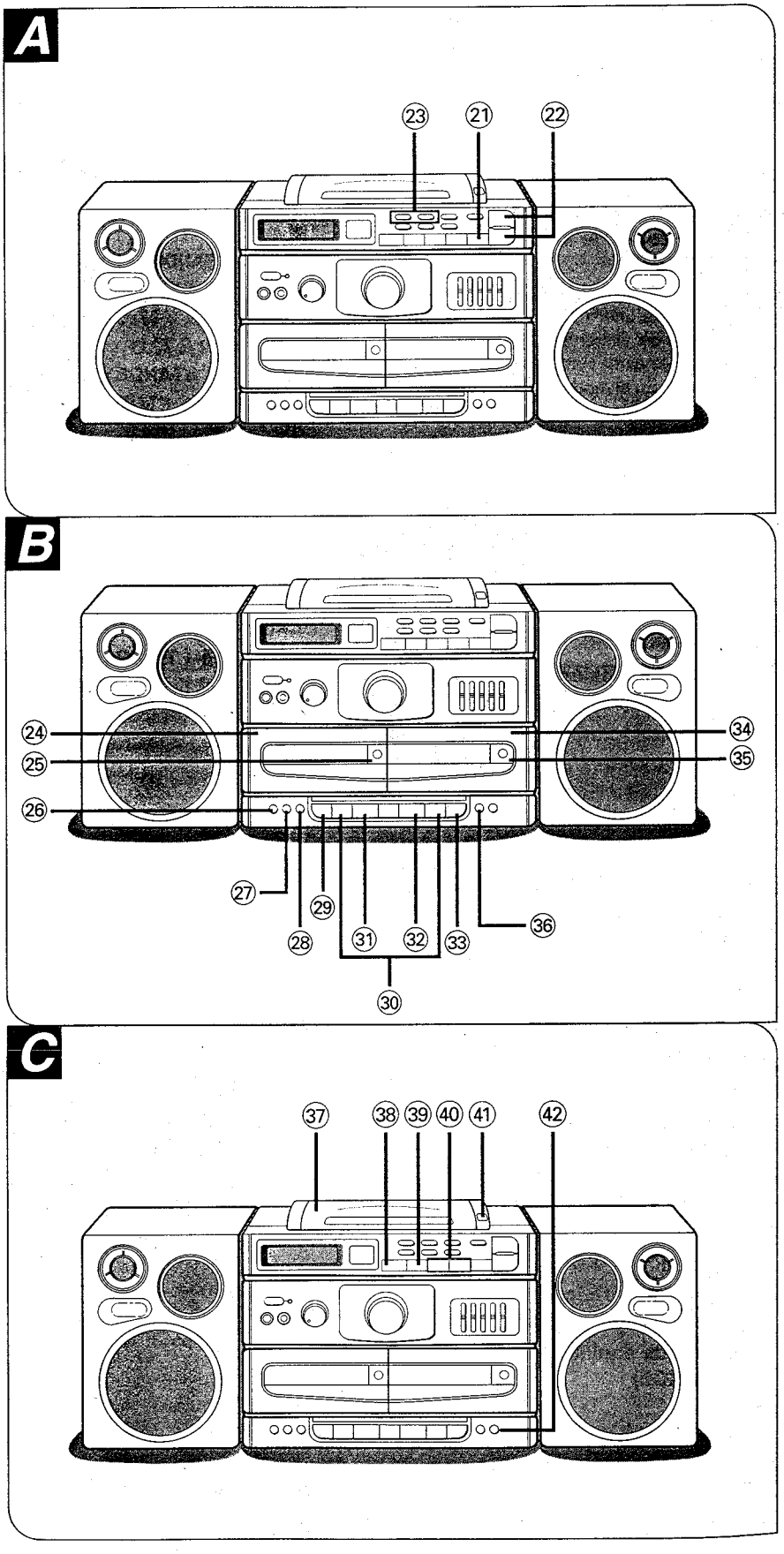
㉑ Band select button (BAND)
㉒ Preset tuning buttons (∧ PRESET TUNING ∨)
㉓ Tuning buttons (–/TUNING/TIME SEARCH/+)

Deck controls B

㉔ Deck 1 cassette holder (DECK 1)
㉕ Deck 1 cassette eject button (⏏)
㉖ Edit recording button (TAPE EDIT)
㉗ Reverse mode select button (REVERSE MODE)
㉘ Counter reset button (COUNTER RESET)
㉙ Deck selector button (DECK SELECT 1/2)
㉚ Fast-forward/rewind/tape program sensor (TPS ◄◄, ►► TPS)
㉛ Reverse-Side playback button (REV ◄)
㉜ Forward-Side playback button (FWD ►)
㉝ Stop button (STOP ■)
㉞ Deck 2 cassette holder (DECK 2)
㉟ Deck 2 cassette eject button (⏏)
㊱ Record pause button (●II)

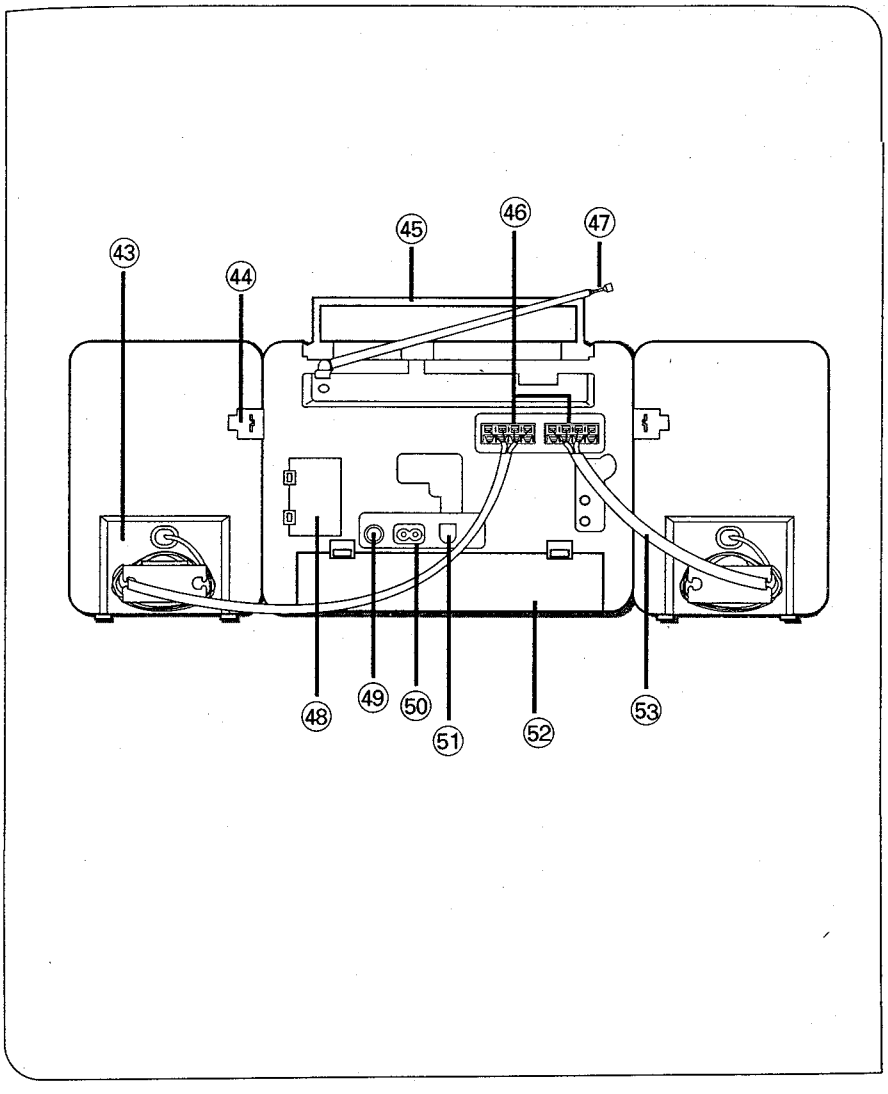
CD controls C

㊲ CD lid
㊳ Play/pause button (►/II)
㊴ Stop/clear button (■/CLEAR)
㊵ Skip/search buttons (|◄◄, ►►|)
㊶ CD lid open button (▲)
㊷ Easy CD recording button (EASY CD REC)

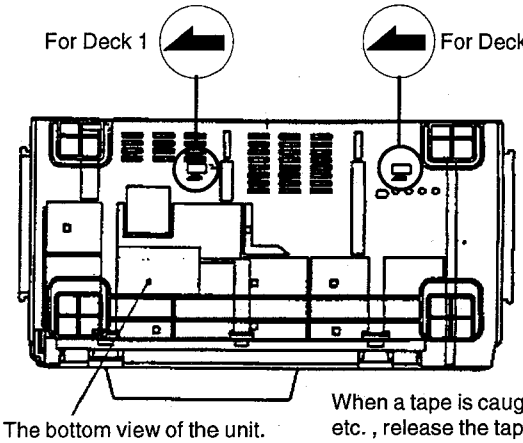


Rear panel section

- ㊸ Speaker cable compartments
- ㊹ Speaker release levers (RELEASE)
- ㊺ Handle
- ㊻ Speaker terminals
- ㊼ Telescopic antenna
- ㊽ Memory back-up battery compartment cover
- ㊾ DC input jack (DC IN 13.2V)
- ㊿ AC socket (AC IN~)
- (51) Voltage selector (VOLTAGE SELECTOR)
- (52) Battery compartment cover
- (53) Speaker cables



■ What to do when the tape is entangled



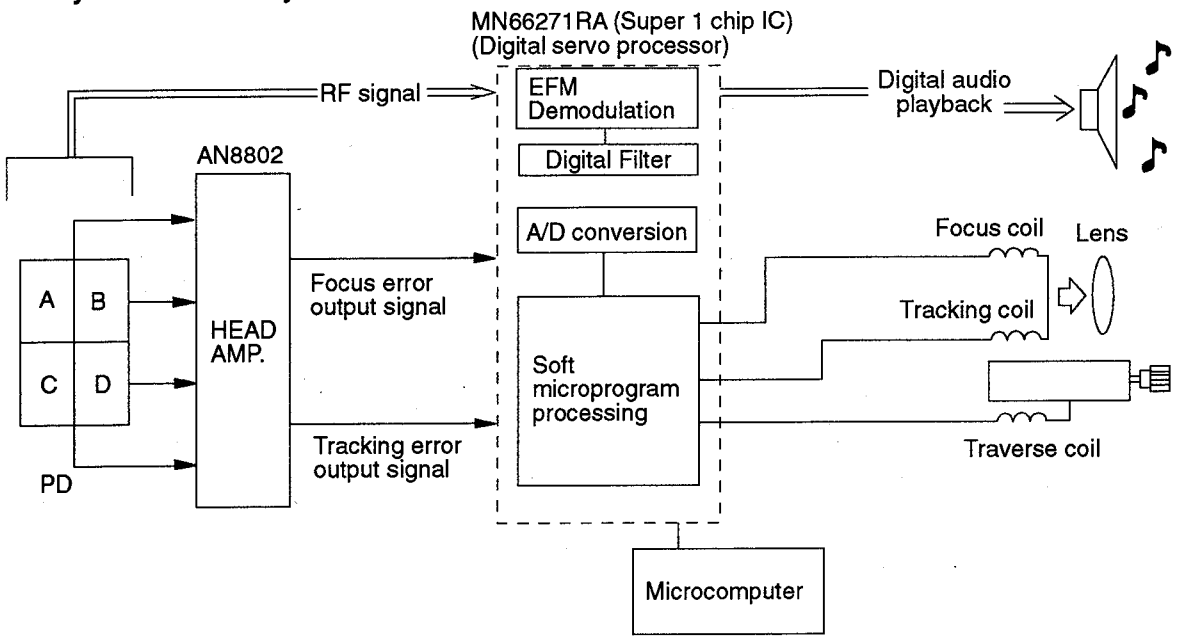
The bottom view of the unit.

When a tape is caught in the pinch roller, etc., release the tape by turning the pulley on the motor with a screwdriver in the direction of arrow.

■ Digital Servo System

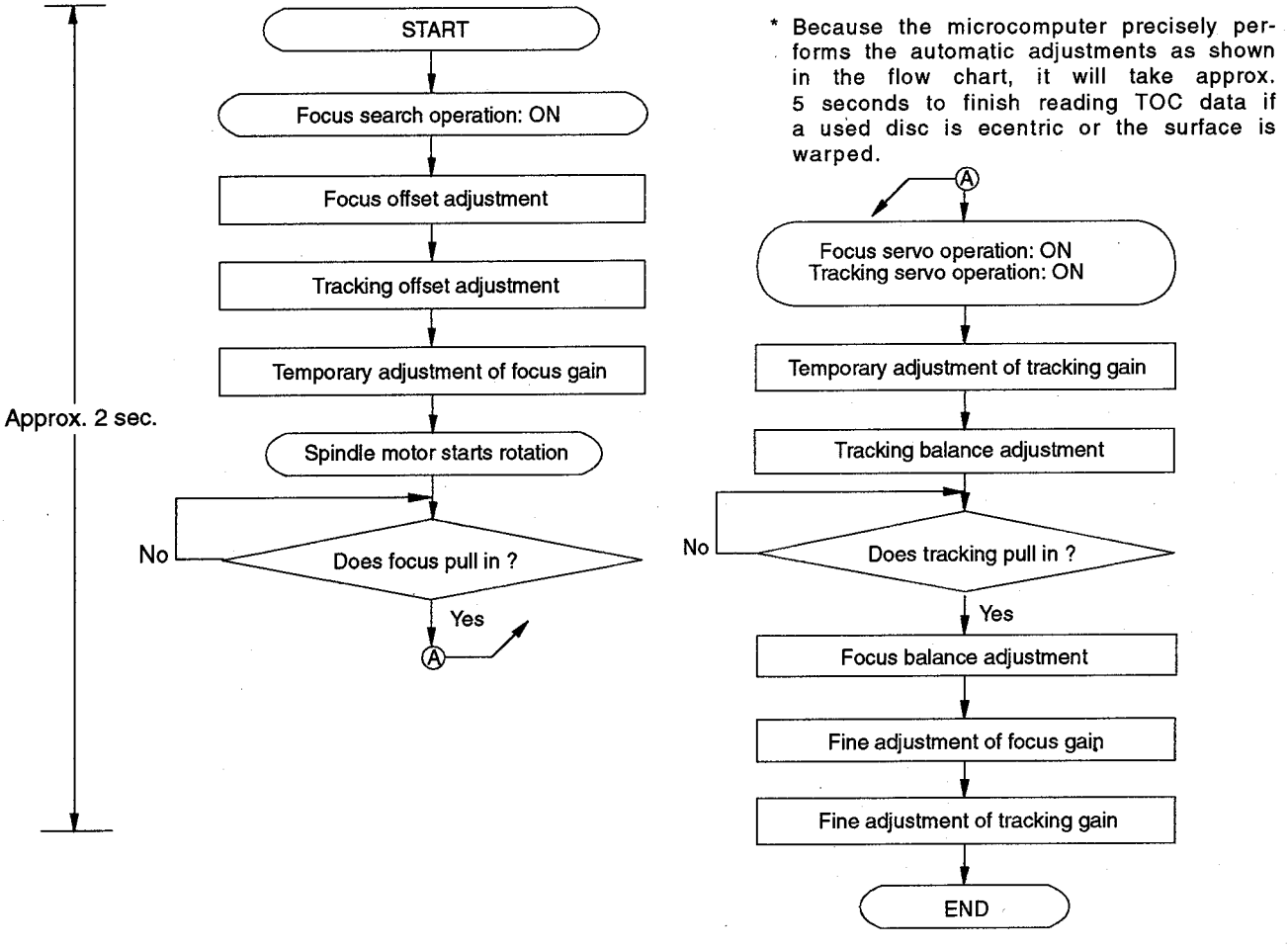
DIGITAL SERVO SYSTEM

This servo system has no adjustment VRs.



The following flow chart shows the sequence of automatic adjustments.

- **Flow chart on automatic adjustment sequence**

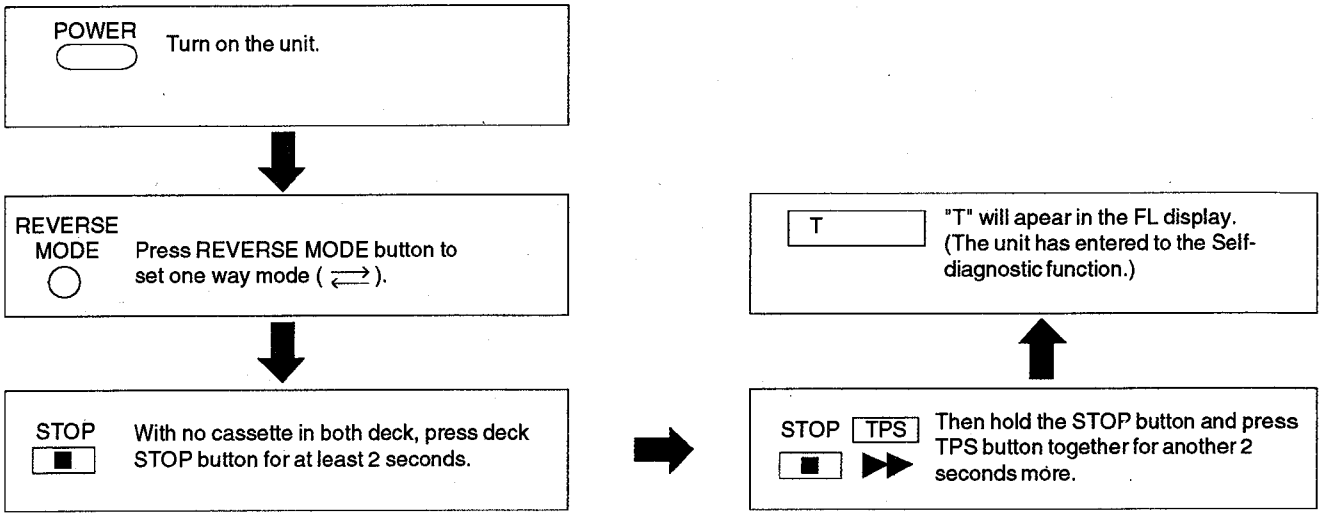


* Because the microcomputer precisely performs the automatic adjustments as shown in the flow chart, it will take approx. 5 seconds to finish reading TOC data if a used disc is ecentric or the surface is warped.

■ Self-Diagnostic Display Function

This unit has a self-diagnotic function to indicate malfunction.You should take advantage of this function when performing maintenance.

• How to set Self-Diagnostic mode


POWER
Turn on the unit.
REVERSE MODE
Press REVERSE MODE button to set one way mode (⇄).
STOP
With no cassette in both deck, press deck STOP button for at least 2 seconds.
T
"T" will apear in the FL display. (The unit has entered to the Self-diagnostic function.)
STOP
TPS
Then hold the STOP button and press TPS button together for another 2 seconds more.

• Cassette Mechanism Test (For error code H02,H03, F01,F02)

Tape Deck 1, Tape Deck 2 can be tested with the same procedure as following :
(Tape deck 1 will not check H02 because there is no recording function for deck 1.)

1. Load a cassette tape with the erasure prevention tab, removes from one side only and close the cassette holder.
2. Press TPS (▶▶) button and STOP (■).
3. Load a pre-recorded music tape with a erasure prevention tab on both side and close the cassette holder.
4. Press FWD play (▶) button, and then press TPS (▶▶) button to operate the TPS function.
   • After TPS function, the test for cassette mechanism is completed. If TPS is not working properly, the test will be completed by Auto-Stop at the end of the tape.
5. Press STOP (■) button to indicate Error Code.
   • If more than one problem has occurred, each error code will change each time the STOP (■) button is pressed. If no problem occurred, "T" indication will remain unchange.
   • Press DECK SELECT (1/2) button to select deck 1 or 2 for checking.

• CD Mechanism Test (H01, F15, F75)

1. Load a CD and close the CD Lid.
2. After the unit is turned on, press the CD play/pause (▶/II) button.
3. Follow the steps on "How to set Self-Diagnostic mode". "T" will appear on the display.
4. Press the cassette deck STOP (■) button to indicate the error code.

   Note : • H01 is error code for cassette mechanism. (Press DECK SELECT (1/2) button to select the desired deck.)
   • If more than one errors exist, each error code will appear each time the STOP (■) button is pressed. If there is no problem, "T" indication remains unchange.

• Battery and Power Test (U01, U02)

• U01 or U02 will appear on the display automatically after POWER button is pressed. It will disappear after 10 seconds.

• How to clear the error code memory

• Press the STOP (■) button of the cassette deck for 5 seconds (in diagnostic mode).
• Turn off the unit.

NOTE :

* For the cassette deck to perform the TPS (tape program sensor) function, there must be black spaces with no signal recorded between the programs on the tape.
Therefore the following types of recorded tapes cannot be used :

- Tape on which the blank space between programs is less than 4 seconds long.
- Tapes on which there is no unrecorded blank spaces (such as a tape recorded using a microphone).
- When there are very low-level or silent sections within a program (such as some classical music recordings).
- When less than 10 seconds have passed after the start of the program or when there is less than 10 seconds remaining until the start of the next program.
- When the recording has bee made using a fade-in (gradually increasing level) or fade-out (gradually decreasing level).

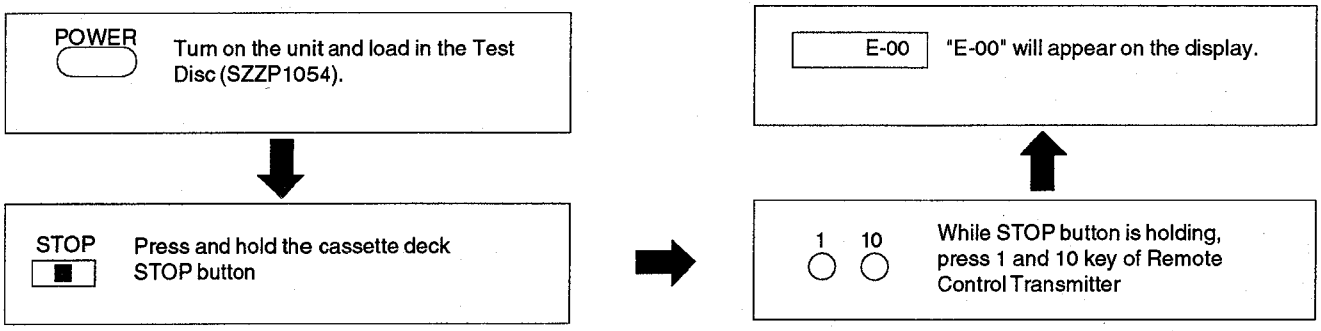
• **Description of Error Code**

Error code	Problem condition	Correction procedure
H01	Faulty operation of cassette mechanism. Example : Reverse-play operation performance when FWD play button is pressed.	Faulty cassette mechanism mode switch [S951, S971] and plunger. (Check and replace)
H02	Recording not possible, or recording mode entered even though erasure prevention tabs have been removed.	Faulty contact or short-circuit of erasure prevention switches [S973, S974]. (Check and replace)
H03	Playback not performed when FWD play (▶) button is pressed. Motor turns when FWD play (▶) button is pressed even though there is no tape cassette loaded in cassette holder.	Faulty contact or short-circuit of cassette half detect switch. [S972] (Check and replace)
F01	When the FWD play (▶) button is pressed, the tape advances slightly and then stops.	Faulty reel pulse, faulty hole detect IC. [IC951, IC971] (Check and replace)
F02	Cassette deck will not perform TPS function.	Faulty playback EQ/recording amplifier IC. [IC601 of Control unit] (Check and replace)
F15	Relatively long time (about 8 seconds) is required to begin play when the CD play/pause (▶/II) buttton is pressed from the power-off state or from a function other than CD player.	Faulty contact on CD mechanism optical pick-up rest switch [S701 of Servo unit]. (Check and replace)
F75	"NO DISC" indication show in the FL display even CD is loaded.	Faulty power supply circuit of CD [IC302 or circuit for power supply]. (Check and replace) Faulty servo processor IC [IC702 of Servo unit]. (Check and replace)
U01	When the unit is operating on batteries, power supply ceases soon after the POWER button is set to ON.	It is due to consumption of batteries. Replace the batteries with new ones.
U02	Settling the POWER button to ON causes no supply of power.	Check the power plug (AC), or insert batteries (DC).

■ CD Self-Check Function

- This unit provide the function to indicate error code of the result of Automatic-Adjustment of CD (Tracking, Focus, Offset, etc). Base on these error codes, you can able to locate the faulty area.
- Please use the ten-keys type of Remote Control Transmitter (part number : EUR642195)
  (The Remote Control Transmitter used by this model is unable to perform this function.)

• **How to set the CD Self-Check Function**


POWER
Turn on the unit and load in the Test Disc (SZZP1054).
STOP
Press and hold the cassette deck STOP button
1
10
While STOP button is holding, press 1 and 10 key of Remote Control Transmitter
E-00
"E-00" will appear on the display.

- **Error code based troubleshooting**
- The unit is satisfactory if the error code is **E00**.
- Before testing , make sure that the test disc is free of scratches and dirt and optical pickup is clean.
- All the ICs and test points are from the Servo unit.

FL error code display	Symptom	Probable cause	Signal to check		Normal the values of voltage and waveform	
			Signal name	Location	PLAY	STOP
E01	Focus and tracking offset adjustments did not complete in the specified time period.	① Clocks X1 and X2, power supply VDD, and reset/RST, all on IC702. ② MDATA, MCLK, MLD and SENSE signals to/from the mechanism controller.	MDATA	IC702 ⑧ pin		4.8V
			MCLK	IC702 ⑦ pin		4.8V
			MLD	IC702 ⑨ pin		
			SENSE	IC702 ⑩ pin	0V	0V
			/RST	IC702 ⑱ pin	4.9V	4.9V
			X1	IC702 ⑤⑧ pin		
			X2	IC702 ⑤⑨ pin		
E03 E05 E07 E09 E0B E0D E0F	Disc play unstable	① Scratches or contaminants on disc surface. ② Focus and tracking servo circuits (check waveforms, voltages, and part constants). ③ Spindle driver circuit. ④ Optical pickup.	FE	IC702 ③② pin		2.4V
			TE	IC702 ③③ pin		2.4V
			FOD	IC702 ②⑧ pin	2.4V	2.4V
			TRD	IC702 ②⑦ pin	2.4V	2.4V
			KICK	IC702 ②⑥ pin	2.4V	2.4V
			/FLOCK	IC702 ⑪ pin	0V	4.9V
			/RF DET	IC702 ③⑧ pin	0V	4.8V
			RF	TJ701		3.4V
			STAT	IC702 ⑰ pin	3.5V	0V
E04 E06 E0C E0E	Best Eye (PD Balance) adjustment did not complete in specified time period.	① Scratches or contaminants on disc surface. ② Focus and tracking servo circuits (check waveforms, voltages, and part constants). ③ Optical pickup.	FBAL	IC702 ③⑩ pin	2.5 ± 1.25V	2.5 ± 1.25V
			RF	TJ701		3.4V
			FE	IC702 ③② pin		0V
			/TLOCK	IC702 ⑫ pin	0V	0V
			OFT	IC702 ③⑥ pin	0V	0V
E08 E0A	Focus or tracking gain adjustment did not complete in the specified time period.	① Scratches or contaminants on disc surface. ② Focus and tracking servo circuits (check waveforms, voltages, and part constants). ③ Optical pickup.	FE	IC702 ③② pin		2.4V
			TE	IC702 ③③ pin		2.4V
			/TLOCK	IC702 ⑫ pin	0V	0V
			OFT	IC702 ③⑥ pin	0V	0V

- **How to cancel CD Self-Check Function**

POWER	Turn off the unit.

■ Measurement and Adjustment

< TUNER SECTION >

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
1. Set volume control to maximum. 2. Set S-XBS level control to minimum. 3. Set power source voltage to 15V DC.	4. Set GEQ controls to center. 5. Output of signal generator should be no higher than necessary to obtain an output reading.

■ AM-IF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	450 kHz 30% Mod. at 400Hz	Point of non-interference. (on/about 600Hz)	Headphones Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	T2 (AM IFT)	Adjust for maximum output.

■ MW-RF ALIGNMENT

Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	531kHz	Tuning capacitor fully closed.	TP3...(+) TP4...(−)	L9 (MW OSC Coil)	Adjust L9, for 1.1±0.15V reading on DC voltmeter across TP3 & TP4.
"	603kHz	Tune to signal	"	(*1) L7-1 (MW ANT Coil)	Adjust for maximum output. Adjust L7-1 by moving coil along the ferrite core.
"	1404kHz	"	"	CT3 (MW ANT Trimmer)	Adjust for maximum output.
(*1) Cement antenna coil with wax after completing alignment.					

■ SW-RF (3.2 – 7.3MHz) ALIGNMENT

Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	3.2MHz	Tuning capacitor fully closed.	TP3...(+) TP4...(−)	L10 (SW OSC Coil)	Adjust L10, for 2.0±0.15V reading on DC voltmeter across TP3 & TP4.
"	3.2MHz	Tune to signal	"	(*2) L7-2 (SW ANT Coil)	Adjust for maximum output. Adjust L7-2 by moving coil along the ferrite core.
"	7.3MHz	"	"	CT4 (SW ANT Trimmer)	Adjust for maximum output.
(*2) Fix antenna coil with wax after completing alignment.					

■ SW-RF (9.5 – 21.85MHz) ALIGNMENT

Connect to test point TP1 through ceramic capacitor (10pF). Negative side to test point TP2.	9.5MHz	Tuning capacitor fully closed.	TP3...(+) TP4...(−)	L11 (SW OSC Coil)	Adjust L11, for 2.0±0.15V reading on DC voltmeter across TP3 & TP4.
	9.5MHz	Tune to signal	"	L8 (SW ANT Coil)	Adjust for maximum output.

■ FM-IF ALIGNMENT

SIGNAL GENERATOR or SWEEPGENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Connect to test point TP13 through ceramic capacitor(0.001μF) Negative side to test point TP2.	10.7 MHz (SWEEP)	Point of interference. (on/about 90 MHz)	Connect vert. amp. scope to test point TP3 .Negative side to test point TP4 .	T1 (FM 1st)	Waveform is shown in Fig. 3.
"	"	"	"	T3 (FM 2nd)	Waveform is shown in Fig. 4.

■ FM STEREO ALIGNMENT & "ZERO" VOLTAGE ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT (Shown in Fig. 1)	SPECIFICATION	REMARKS
98 MHz, 60 dB(CW) Connect to test point TP1 through FM dummy antenna. Negative side to TP2 .	TP5 . . .(+) TP6 . . .(–)	VR1	19.00 ± 0.05kHz	Adjust VR1, for 19kHz ± 50Hz reading on frequency counter.
"	Connect the DC Voltmeter between TP9 & TP10	T3	0 ± 30mV	Align coil T3 for "ZERO" voltage to be in the range of 0 ± 30mV

< CASSETTE DECK SECTION >

■ HEAD AZIMUTH ALIGNMENT

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	REMARKS
QZZCFM (8kHz, -20dB)	Headphones Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	Azimuth screw (Shown in Fig. 5)	1. Playback the azimuth adjustment portion (8 kHz, -20 dB) of the test tape (QZZCFM) . Vary the azimuth adjusting screw until the outputs of the L-ch and R-ch are maximized and the lisajous waveform, as illustrated, approaches 0 degrees. Notes: When the adjusting positions are different with L-ch and R-ch ,find a position where the outputs of L-ch and R-ch are balanced, and then make the adjustment into the range " 0 ~ -0.5dB " from the peak.

■ TAPE SPEED ADJUSTMENT

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT (Shown in Fig. 6)	REMARKS
QZZCWAT (3 kHz)	Headphones Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	Deck 1 Normal Speed ..... VR603 Deck 2 High Speed ..... VR601 Deck 2 Normal Speed VR602	1. Insert test tape (QZZCWAT) in Deck 1 and start playback in forward direction. 2. Adjust VR603 until the frequency is set to **3000 ± 20Hz.** 3. Short the test point TP1 and TP2, TP2 and TP3 to set the high speed mode. 4. Insert test tape (QZZCWAT) in Deck 1 and start playback in forward direction. • This frequency is defined as **F.** 5. Insert test tape (QZZCWAT) in Deck 2 and start playback in forward direction. 6. Adjust VR601 until the frequency is set to **F ± 40Hz.** 7. Open the test point TP1 and TP2, TP2 and TP3 to set the normal speed mode. 8. Insert test tape (QZZCWAT) in Deck 2 and start playback in forward direction. 9. Adjust VR602 until the frequency is set to **3000 ± 20Hz.**

■ RECORD BIAS VOLTAGE

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER (refer to Fig. 7)	ADJUSTMENT	SPECIFICATION	REMARKS
Use CrO_2 tape and Normal tape	TP6 ...(+) TP4 ...(–)	———	CrO_2 ... 20.5 ± 1.0mV Normal ... 15.5 ± 1.0mV	• Record mode

■ ALIGNMENT POINT

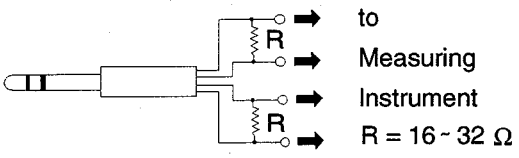


Fig. 2

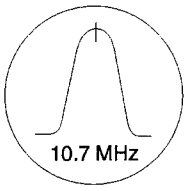


Fig. 3

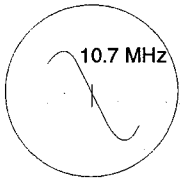


Fig. 4

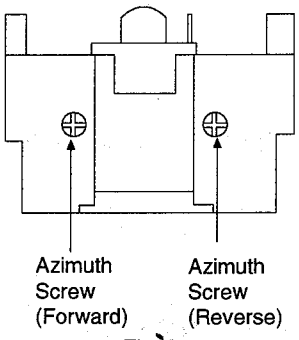


Fig. 5

• Please refer to Circuit Board and Wiring Connection Diagram for test point locations.

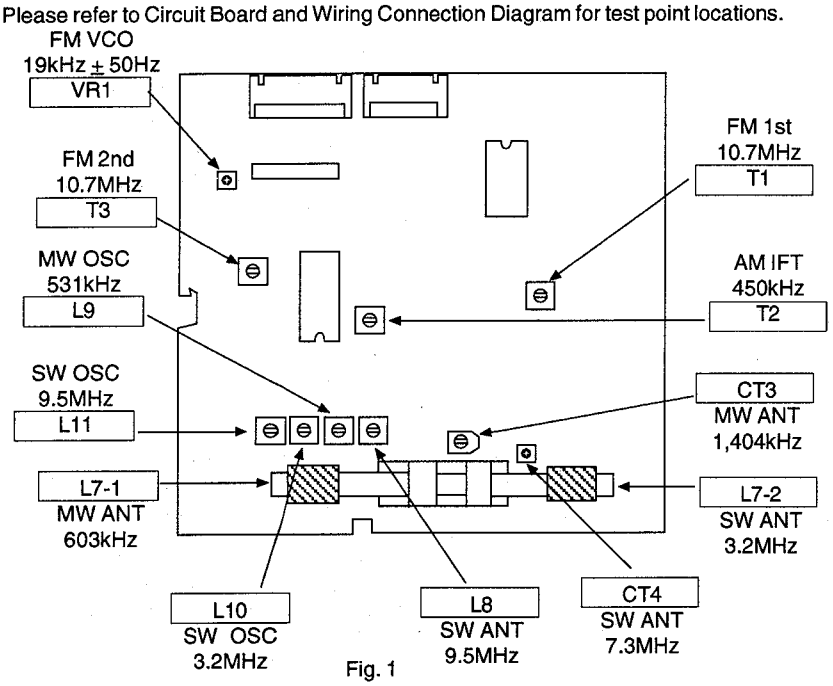


Fig. 1

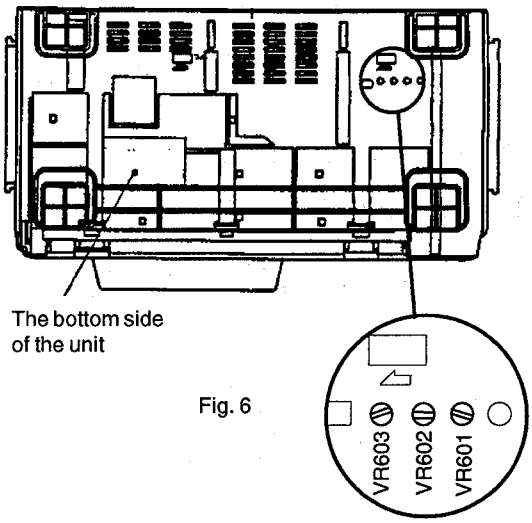


Fig. 6

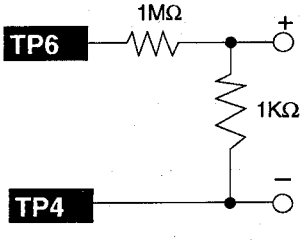


Fig 7

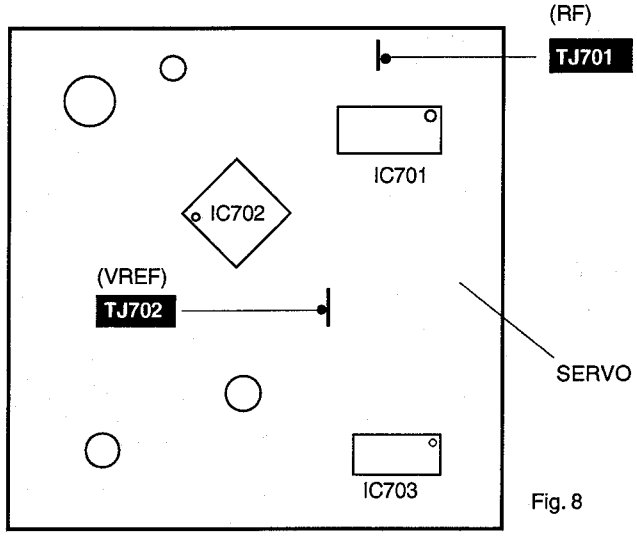


Fig. 8

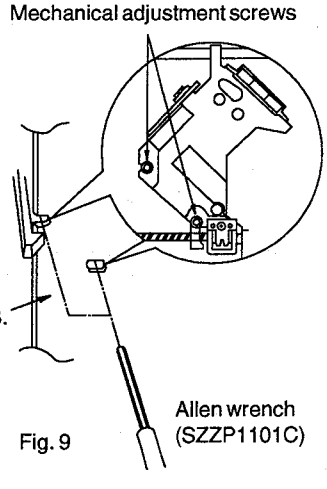


Fig. 9

< CD UNIT SECTION >

Warning: This product uses a laser diode. Refer to caution statements on page 2.

Caution: It is very dangerous to look or touch the laser beam. (laser radiation is invisible)
With the unit turned "on", laser radiation is emitted from the pickup lens.
Avoid exposure to the laser beam, especially when performing adjustments.

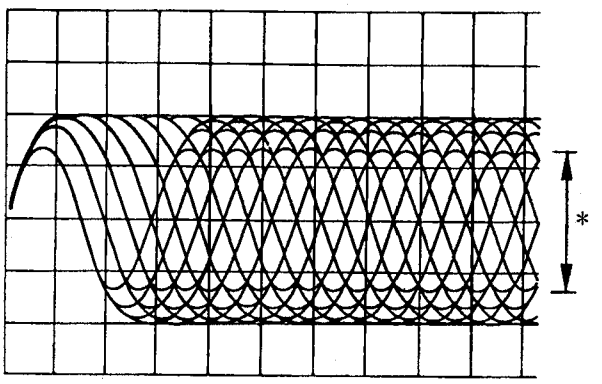
Measuring Instruments and Special Tools

* Test discs
1. Playability test disc (SZZP1054C).
2. Uneven test disc (SZZP1056C).
* Musical program disc (ordinary).
* Dual-beam oscilloscope with bandwidth of 30 MHz or better (with EXT. trigger and 1 : 1 probe).
* Allen wrench (M2.0) (SZZP1101C).
* Lock paint (RZZ0L01)

(1) MECHANICAL ADJUSTMENT

- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability if the traverse deck has not been replaced.

1. Connect the oscilloscope's CH. 1 probe across TJ701 (RF) (+) and TJ702 (V-Ref.) (–) on the servo P.C.B. (Refer to Fig. 8)
   Oscilloscope setting : VOLT .....200mV.
   SWEEP.....0.5µs.
   Input coupling .....AC.
2. Switch the player power **ON**, and play track **19** on the test disc (SZZ1056C).
   (Playing any other track will prevent the HEX screws from being accessed.)
3. Leave the player in play mode.
4. Alternately adjust the HEX screws with the 2.0mm allen wrench (SZZP1101C) until the vertical fluctuation of RF signal is minimized and the eye pattern is most stretched. (Refer to Fig. 9)
5. After completing the adjustment, lock the HEX screws with lock paint (RZZ0L01).



* Most stretched eye pattern

(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

*** Checking skip Search**
1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

*** Checking Manual Search**
1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

*** Checking Playability**
1. Play the 0.7mm black dot and the 0.7mm wedge on the test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

■ Terminal Function of ICs

• IC702 (MN66271RA): Digital Servo processor/digital signal processor/digital filter/D/A converter

Pin No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock terminal
2	LRCK	O	L/R discriminating signal
3	SRDATA	O	Serial data (Not used, open)
4	$DV_{DD}1$	I	Power supply (digital circuit) terminal
5	$DV_{SS}1$	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L": LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Optical servo condition (focus) ("L": lead-in)
12	/TLOCK	O	Optical servo condition (tracking) ("L": lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	I	Muting input ("H": MUTE)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	/RST	I	Reset signal ("L" : reset)
19	SMCK	O	System clock (f=4.2336 MHz)
20	PMCK	O	Frequency division clock signal (Not used, open) ($f=\frac{1}{1.92}$ x ck = 88.2 kHz)
21	TRV	O	Traverse servo control
22	TVD	O	Traverse drive signal
23	PC	O	Turntable motor drive signal ("L" : ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD,ECS,TRD,FOD, BAL,TBAL)normal voltage input terminal
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output

Pin No.	Mark	I/O Division	Function
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H" : det.)
36	OFT	I	Off track signal ("H" : Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal ("L" : detection)
39	BDO	I	Dropout detection signal ("H" : dropout)
40	LDON	O	Laser power control ("H" : ON)
41	TES	O	Tracking error shunt output ("H" : dropout)
42	PLAY	O	Play signal ("H" : play)
43	WVEL	O	Double velocity status signal ("H" : double)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I/O	VCO loop filter terminal (Not used, open)
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal (2)
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	EFM	O	EFM signal (Not used, open)
53	PCK	O	PLL extract clock (f = 4.3218 MHz)
54	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)
55	SUBC	O	Sub-code serial output data (Not used, open)
56	SBCK	I	Sub-code serial output clock (Not used, open)
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f = 16.9344 MHz)
59	X2	O	Crystal oscillator terminal (f = 16.9344 MHz)
60	VDD	I	Power supply terminal
61	BYTCK	O	Byte clock signal
62	/CLDCK	O	Sub-code frame clock signal (f CLDCK = 7.35 kHz : Normal) (Not used, open)

Pin No.	Mark	I/O Division	Function
63	FCLK	O	Crystal rfame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal
65	FLAG	O	Flag terminal
66	CLVS	O	Turntable servo phase synchro signal ("H" : CLV, "L" : Rough servo)
67	CRC	O	Sub-code CRC check terminal ("H" : OK, "L" : NG)
68	DEMPH	O	De-emphasis ON signal ("H" : ON)
69	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
70	/RST2	I	Reset terminal after MASH" circuit
71	/TEST	I	Test terminal (Normal : "H")

Pin No.	Mark	I/O Division	Function
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Power supply (analog circuit) terminal (1)
74	$AV_{SS}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Frequency control terminal of crystal oscillator
77	CSEL	I	Polarity direction control terminal of RF signal
78	PSEL	I	Test terminal (Normal : "L")
79	MSEL	I	"SUBQ" terminal mode select ("H" : Q code buffer)
80	SSEL	I	"SMCK" terminal frequency select ("L" : SMCK = 4.2336 MHz)

• IC701 (AN8802SCE1V) : Servo amp

Pin No.	Mark	I/O Division	Function
1	PDAD	I	Photo detection Bch input without delay
2	PDA	I	Photo detection Ach input without delay
3	LPD	I	Laser PD signal
4	LD	O	Laser power auto control output
5	AMPI	I	RF amp terminal
6	V_{CC}	I	Power supply terminal
7	AMPO	O	RF amp signal, not used.
8	CAGC	I	AGC detection capacitor input
9	ARF	O	RF signal
10	CENV	I	RF detect capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	GND	—	GND terminal
13	LDON	I	LD APC ON/OFF ("H" : ON, "L" : OFF)
14	TES	I	Tracking error shunt input ("H" : shunt)
15	PLAY	I	Play signal ("H" : ON, "L" : OFF)
16	WVEL	I	Double velocity ("H" L double,"L":single)

Pin No.	Mark	I/O Division	Function
17	BDO	O	Dropout detection control
18	/RFDET	O	RF det. signal ("L" : det.)
19	CROSS	O	Tracking error zero cross output
20	OFTR	O	Off track detection ("H" : det.)
21	VDET	O	Oscillation det. signal ("H" : det.)
22	ENV	O	Envelope output terminal
23	TEBPF	I	Oscillation detect input terminal
24	TE	O	Tracking error signal
25	FE	O	Focusing error signal
26	PTO	O	Potention amp output, not used.
27	PTI	I	Potention amp input, not used.
28	TBAL	I	Tracking balance adj. input
29	FBAL	I	Focus balance adj. input
30	VREF	O	Reference voltag output
31	PDB	I	Photo detection Ach input with delay
32	PDBD	I	Photo detection Bch input with delay

• IC801 (UPD78064G031) : System microprocessor

Pin No.	Mark	I/O Division	Function
1	NC	I	NO CONNECTION
2	SQCK	O	CD CLOCK OUTPUT (SUBCODE Q-REGISTER)
3	STATUS	I	CD STATUS INPUT SIGNAL
4	MBP1	O	MICOM BP CONTROL SIGNAL OUTPUT1
5	MBP2	O	MICOM BP CONTROL SIGNAL OUTPUT2
6	Vss	—	Vss (GND)
7	X OUT	O	MAIN SYSTEM CLOCK OSC (4.19MHz)
8	X IN	I	MAIN SYSTEM CLOCK OSC
9	VDD	—	VDD (+5.0V)
10	XT1 IN	I	SUB SYSTEM CLOCK OSC (32.7kHz)
11	XT2 OUT	O	SUB SYSTEM CLOCK OSC
12	$\overline{\text{RESET}}$	I	SYSTEM RESET
13	REM IN	I	REMOTE CONTROL SIGNAL INPUT
14	$\overline{\text{POWER}}$	I	POWER KEY SIGNAL INPUT
15	$\overline{\text{SLEEP}}$	I	SLEEP KEY SIGNAL INPUT
16	BLKCK	I	CD SUBCODE BLOCK CLOCK SIGNAL INPUT
17	RESET SW	I	CD TRAVERSE LIMIT SWITCH INPUT
18	CD RST	O	CD RESET OUTPUT
19	CLOSE	I	CD LID CLOCK SWITCH INPUT
20	SW2	O	SW2 BAND SELECT DATA
21	PLL DA	O	TUNER PLL DATA CODE OUTPUT
22	PLL CE	O	TUNER PLL CE OUTPUT
23	PLL CL	O	TUNER PLL CLOCK OUTPUT
24	MONO	O	TUNER FM MONO SIGNAL OUTPUT
25	SD	I	TUNER TUNED SIGNAL INPUT
26	$\overline{\text{STEREO}}$	I	TUNER FM STEREO SIGNAL INPUT
27	AVSS	—	ANALOG GROUND
28	KEY0	I	KEY0 CONTROL SIGNAL A/D INPUT
29	KEY1	I	KEY1 CONTROL SIGNAL A/D INPUT
30	KEY2	I	KEY2 CONTROL SIGNAL A/D INPUT
31	ADIN1	I	DECK CONTROL A/D INPUT 1
32	ADIN2	I	DECK CONTROL A/D INPUT 2
33	ADIN3	I	DECK CONTROL A/D INPUT 3

Pin No.	Mark	I/O Division	Function
34	BATT	I	BATTERY CHECK INPUT
35	REM STB	I	REMOTE CONTROL STANDBY INPUT
36	AVDD	—	ANALOG POWER SUPPLY (+5V)
37	AVREF	—	ANALOG REFERENCE VOLTAGE (+5V)
38	MUTE A	O	AUDIO/CD MUTE SIGNAL OUTPUT
39	FUNC	O/I	FUNCTION CONTROL SIGNAL OUTPUT
40	VSS	—	GND
41	VOLB	I	VOLUME JOG INPUT B
42	VOLA	I	VOLUME JOG INPUT A
43	VOL PWM	O	VOLUME LEVEL CONTROL PWM OUTPUT
44	CDH	O	CD FUNCTION ACTIVE SIGNAL OUTPUT
45	TAPEH	O	TAPE FUNCTION ACTIVE SIGNAL OUTPUT
46	R3	I	REGION SETTING INPUT PORT
47	R2	I	REGION SETTING INPUT PORT
48	R1	I	REGION SETTING INPUT PORT
49	VCC DET	I	VCC DETECTOR
50	PW CNT	O	POWER CONTROL OUTPUT
51	COM0	O	LCD COMMON OUTPUT
52	COM1	O	LCD COMMON OUTPUT
53	COM2	O	LCD COMMON OUTPUT
54	COM3	O	LCD COMMON OUTPUT
55	BIAS	—	LCD BIAS VOLTAGE
56	VLC0	—	LCD BIAS VOLTAGE
57	VLC1	—	LCD BIAS VOLTAGE
58	VLC2	—	LCD BIAS VOLTAGE
59	VSS	—	SEGMENT OUTPUT
60	S0	O	LCD SEGMENT OUTPUT
61	S1	O	LCD SEGMENT OUTPUT
62	S2	O	LCD SEGMENT OUTPUT
63	S3	O	LCD SEGMENT OUTPUT
64	S4	O	LCD SEGMENT OUTPUT
65	S5	O	LCD SEGMENT OUTPUT
66	S6	O	LCD SEGMENT OUTPUT

Pin No.	Mark	I/O Division	Function
67	S7	O	LCD SEGMENT OUTPUT
68	S8	O	LCD SEGMENT OUTPUT
69	S9	O	LCD SEGMENT OUTPUT
70	S10	O	LCD SEGMENT OUTPUT
71	S11	O	LCD SEGMENT OUTPUT
72	S12	O	LCD SEGMENT OUTPUT
73	S13	O	LCD SEGMENT OUTPUT
74	S14	O	LCD SEGMENT OUTPUT
75	S15	O	LCD SEGMENT OUTPUT
76	S16	O	LCD SEGMENT OUTPUT
77	S17	O	LCD SEGMENT OUTPUT
78	S18	O	LCD SEGMENT OUTPUT
79	S19	O	LCD SEGMENT OUTPUT
80	S20	O	LCD SEGMENT OUTPUT
81	S21	O	LCD SEGMENT OUTPUT
82	S22	O	LCD SEGMENT OUTPUT
83	S23	O	LCD SEGMENT OUTPUT

Pin No.	Mark	I/O Division	Function
84	S24	O	LCD SEGMENT OUTPUT
85	S25	O	LCD SEGMENT OUTPUT
86	S26	O	LCD SEGMENT OUTPUT
87	S27	O	LCD SEGMENT OUTPUT
88	P93	O	LCD SEGMENT OUTPUT
89	P92	O	LCD SEGMENT OUTPUT
90	LOUD B	O	LOUDNESS CONTROL OUTPUT B
91	LOUD A	O	LOUDNESS CONTROL OUTPUT A
92	MKCLK	O	DECK CONTROL CLOCK OUTPUT
93	MKDATA	O	DECK CONTROL DATA OUTPUT
94	$\overline{\text{TLOCK}}$	I	CD TRAVERSE SERVO SIGNAL INPUT
95	$\overline{\text{FLOCK}}$	I	CD FOCUS SERVO SIGNAL INPUT
96	MCLK	O	CD MICOROCOMPUTER COMMAND CLOCK
97	MDATA	O	CD MICOROCOMPUTER COMMAND DATA
98	$\overline{\text{MLD}}$	O	CD MICOROCOMPUTER COMMAND LOAD
99	SENSE	I	CD SENSE SIGNAL INPUT
100	SUBQ	I	CD SUBDATA Q-CODE INPUT

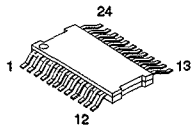
• IC703 (AN8389SE1) : Focus coil / tracking coil / traverse motor / spindle motor drive

Pin No.	Mark	I/O Division	Function
1	V_{cc}	I	Power supply terminal
2	VREF	I	Reference voltage input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	GND terminal
6	NC	—	No connection
7	NRESET	I	Reset terminal
8	GND	—	GND terminal
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (Not used, open)

Pin No.	Mark	I/O Division	Function
13	$PV_{cc}1$	I	Driver power supply (1)
14	PGND1	—	Driver GND terminal (1)
15	D1 –	O	Motor driver (1) output terminal (–)
16	D1 +	O	Motor driver (1) output terminal (+)
17	D2 –	O	Motor driver (2) output terminal (–)
18	D2 +	O	Motor driver (2) output terminal (+)
19	D3 –	O	Motor driver (3) output terminal (–)
20	D3 +	O	Motor driver (3) output terminal (+)
21	D4 –	O	Motor driver (4) output terminal (–)
22	D4 +	O	Motor driver (4) output terminal (+)
23	PGND2	—	Driver GND terminal (2)
24	PVCC2	I	Driver power supply (2)

■ Terminal Guide of ICs, Transistors and Diodes

AN8389SE1



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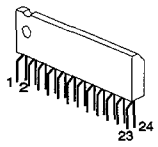

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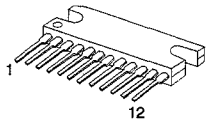

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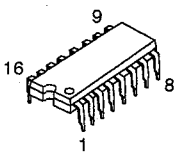

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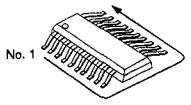

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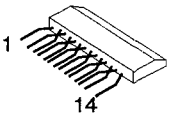

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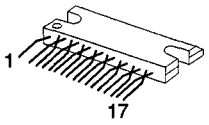

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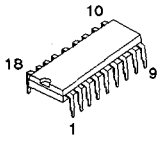

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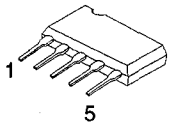

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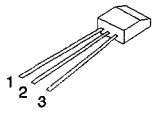

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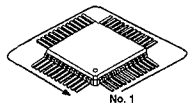

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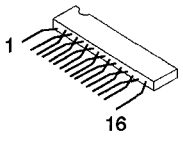

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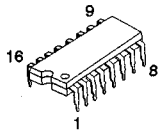

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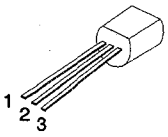

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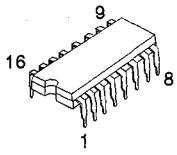

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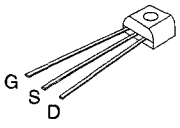

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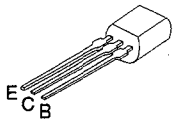

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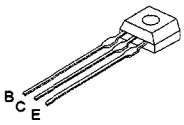

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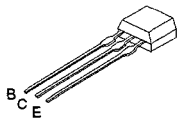

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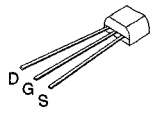

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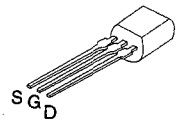

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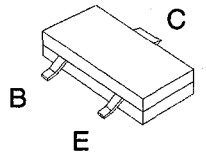

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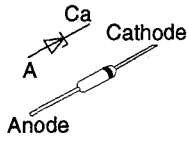

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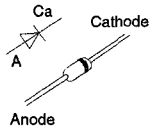

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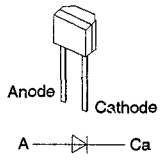

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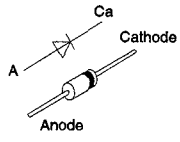
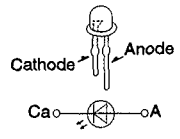
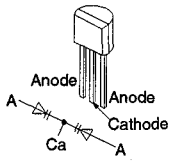


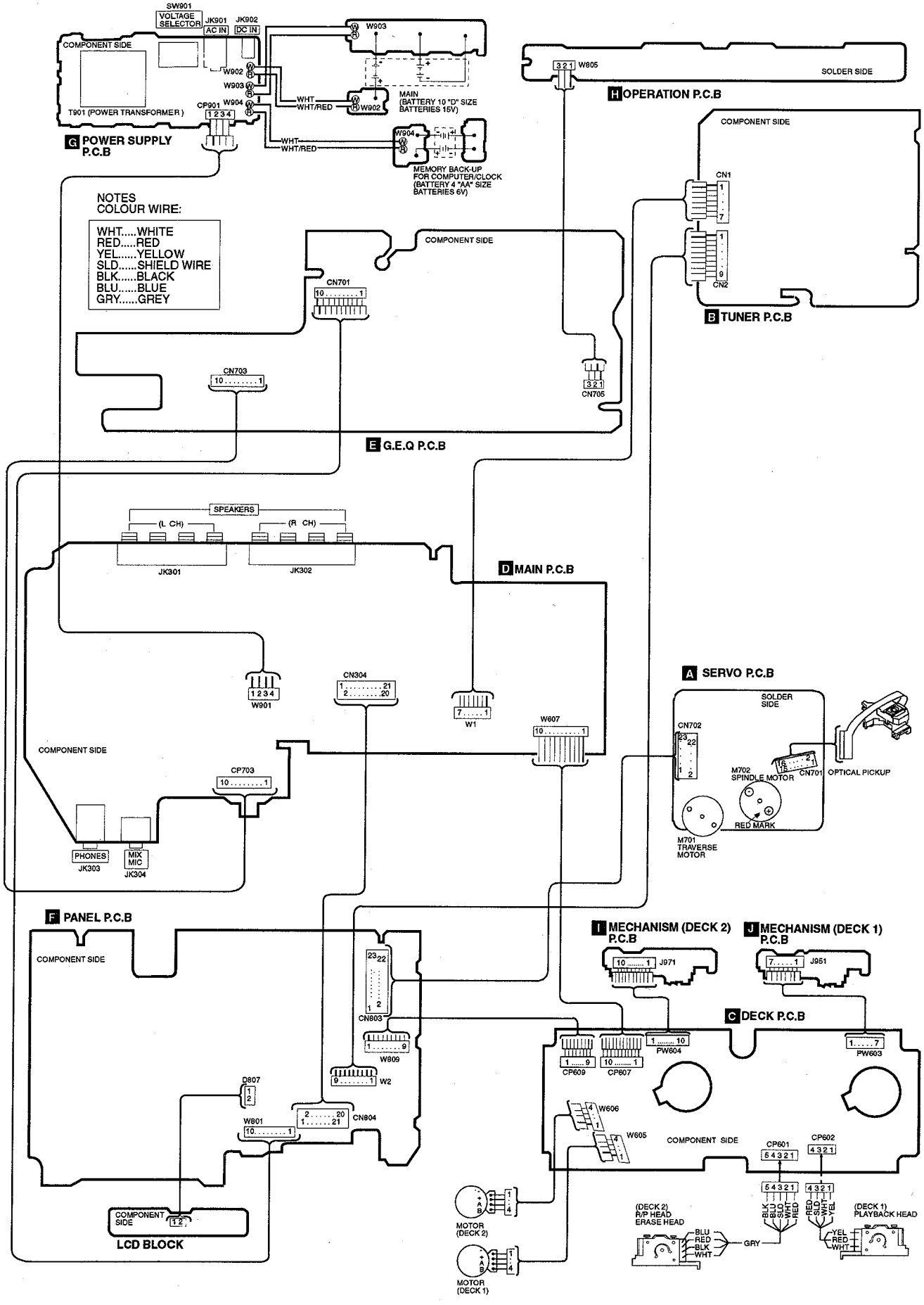
SLR33VC160



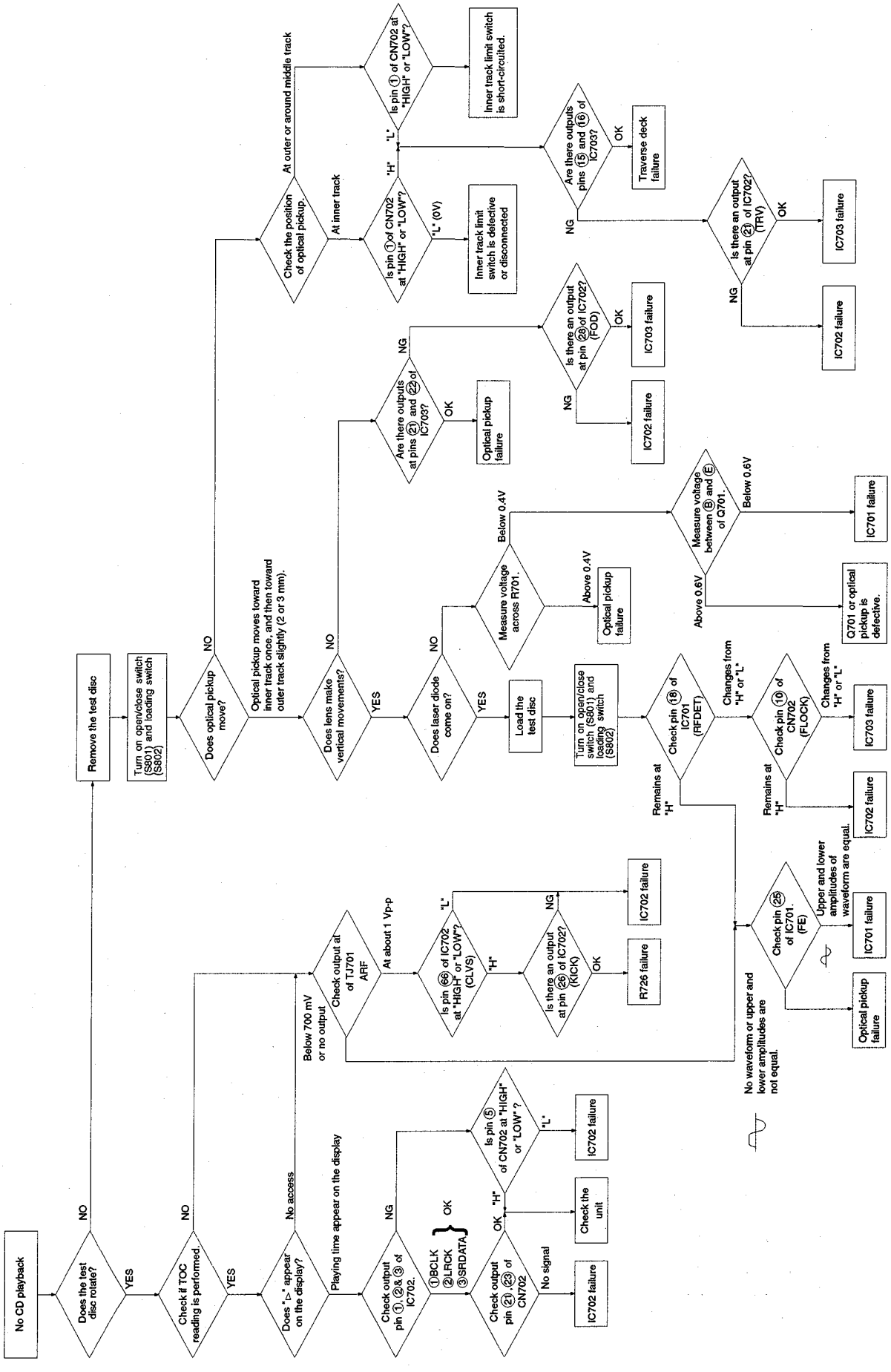


1SV147T4MATU

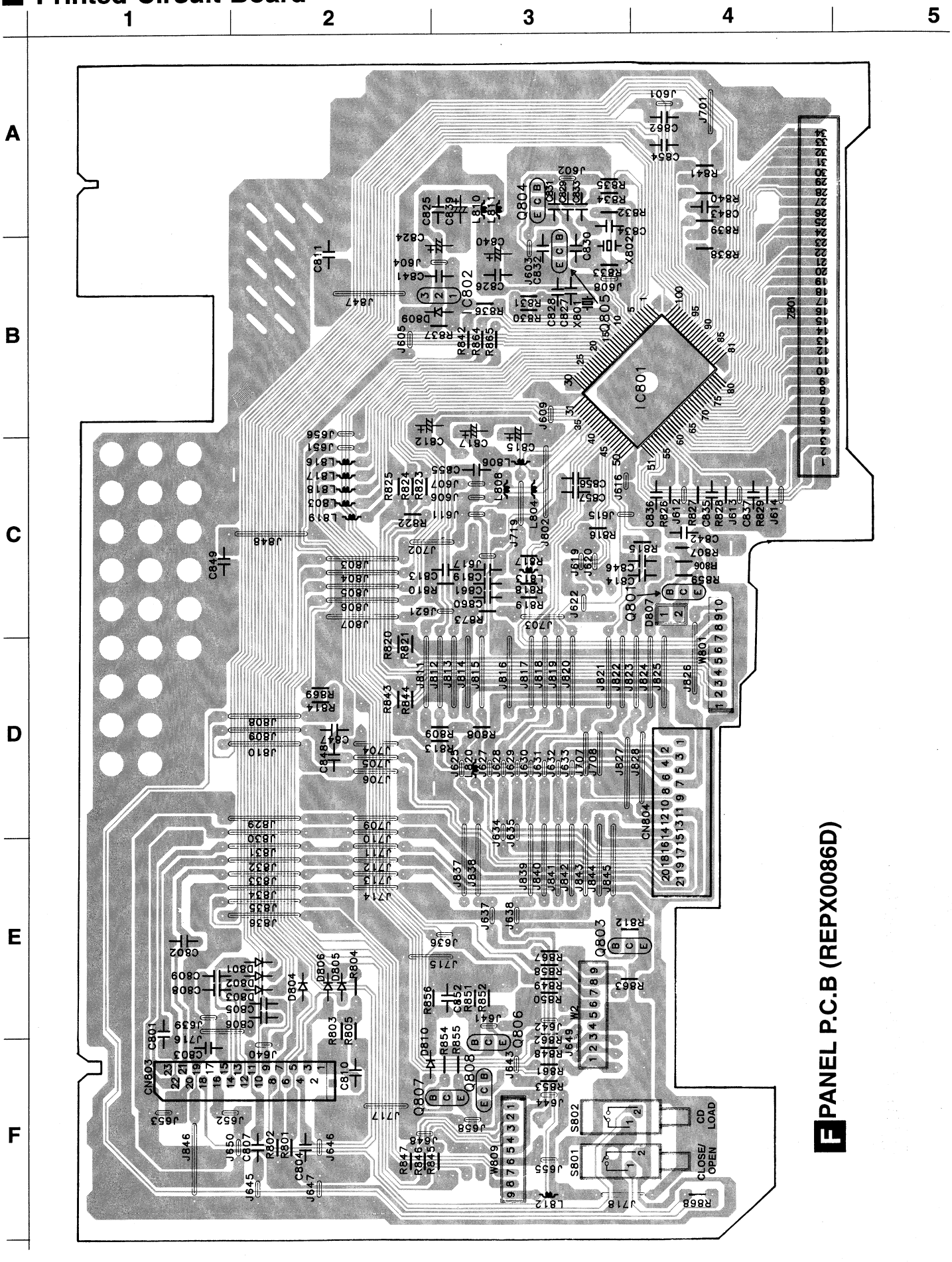
■ Wiring Connection Diagram



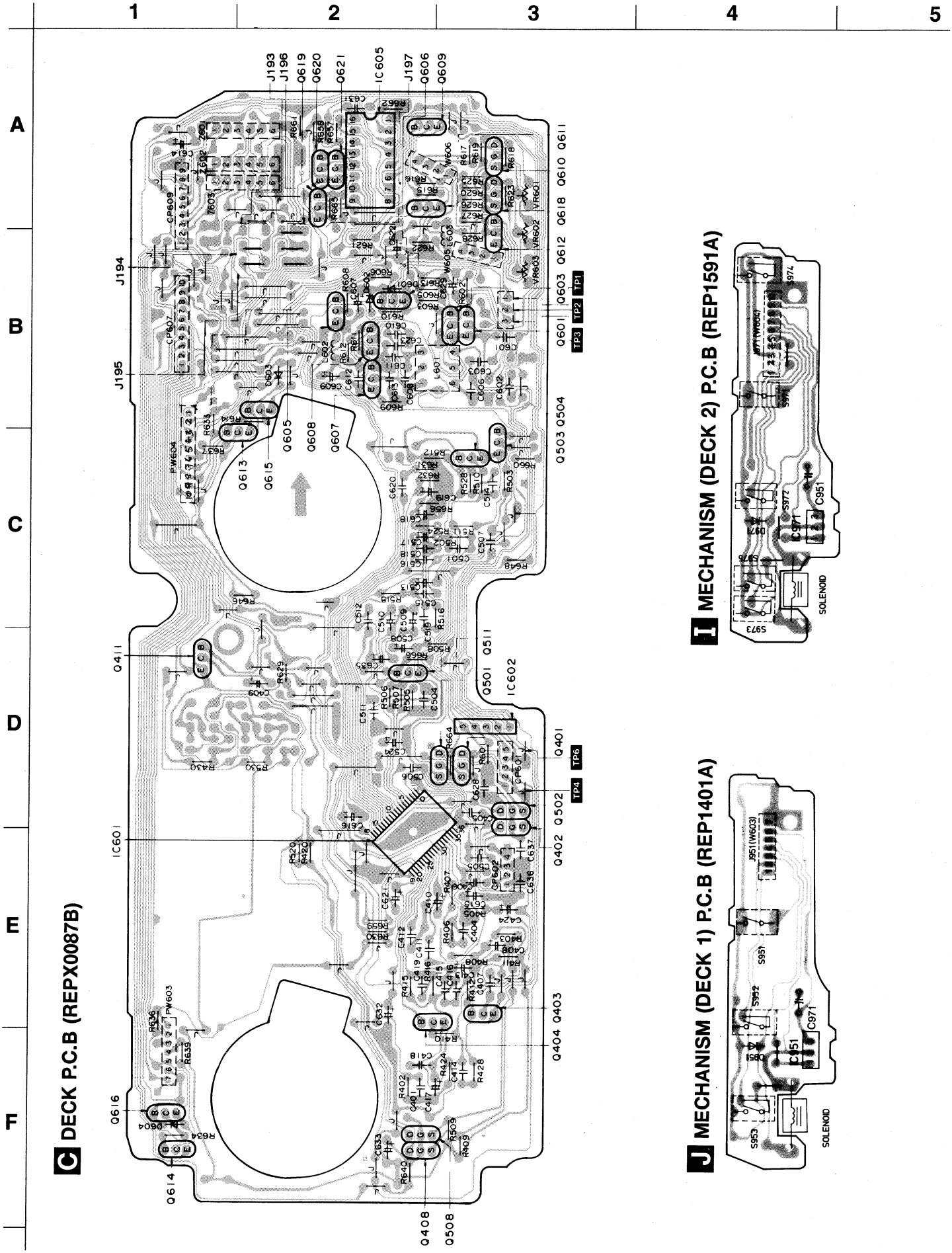
■ Troubleshooting Guide



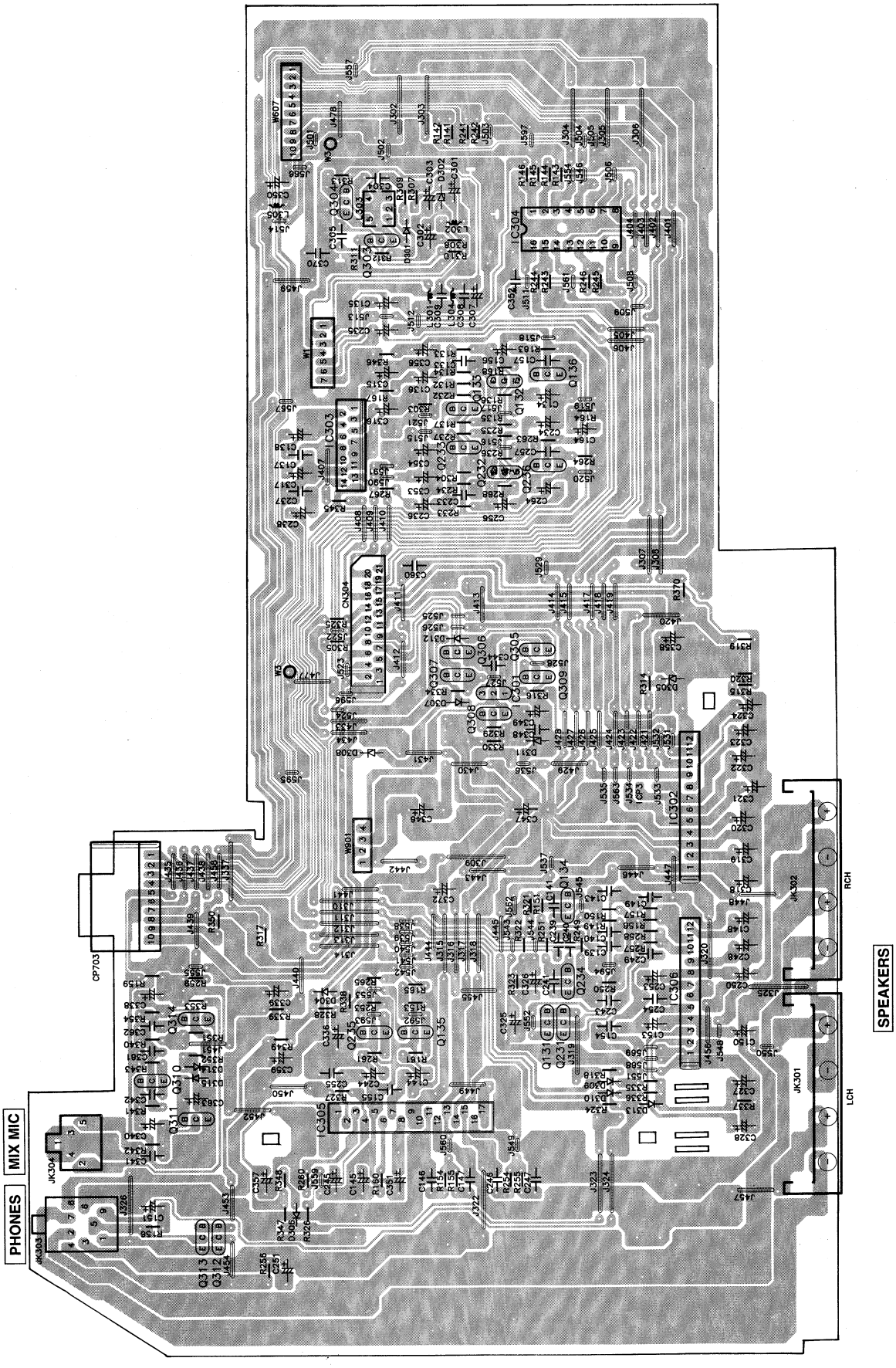
■ Printed Circuit Board



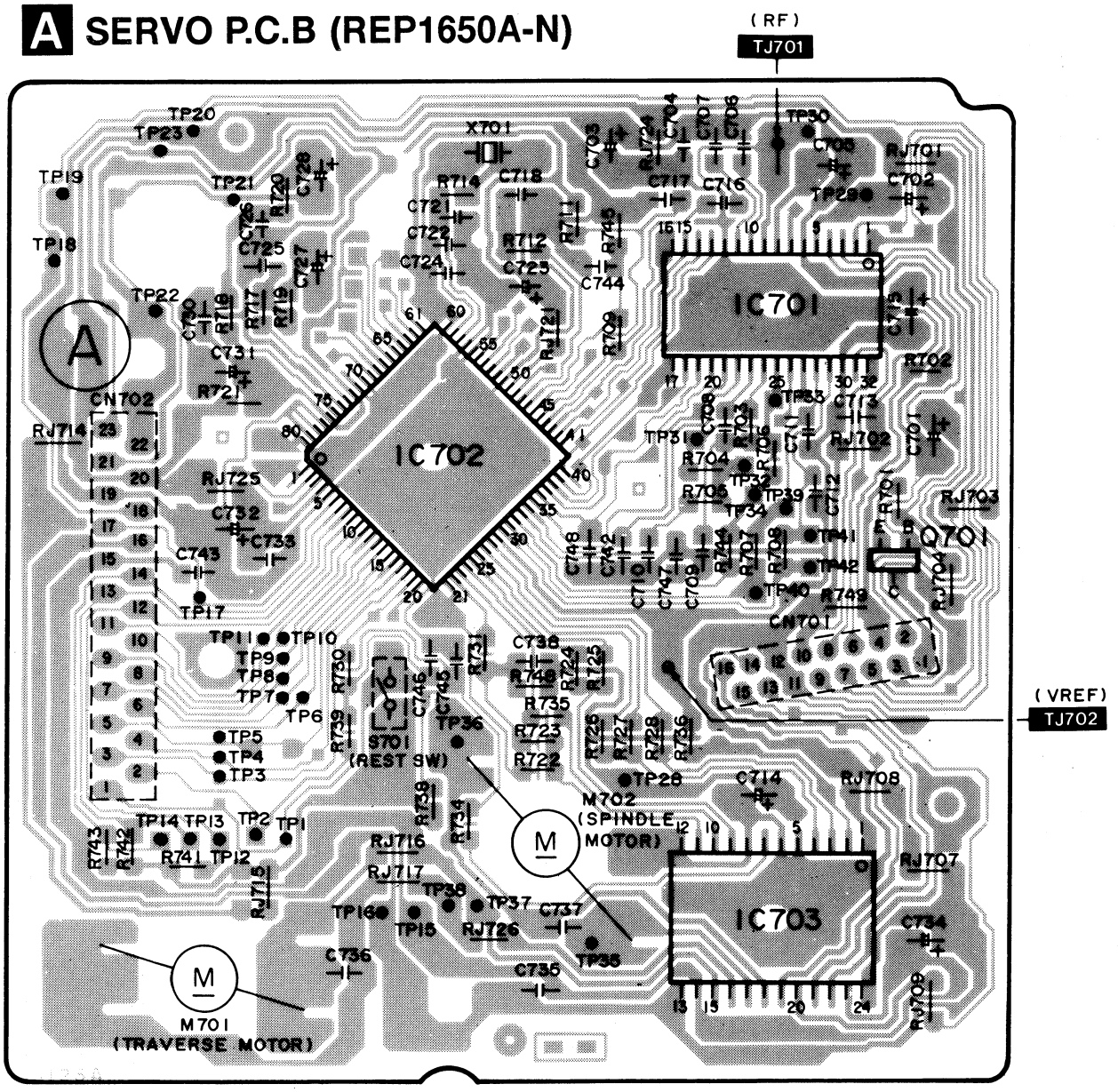
F PANEL P.C.B (REPX0086D)


1
2
3
4
5
A
B
C
D
E
F
C DECK P.C.B (REPX0087B)
I MECHANISM (DECK 2) P.C.B (REP1591A)
J MECHANISM (DECK 1) P.C.B (REP1401A)
SOLENOID
SOLENOID

D MAIN P.C.B (REPX0088B)



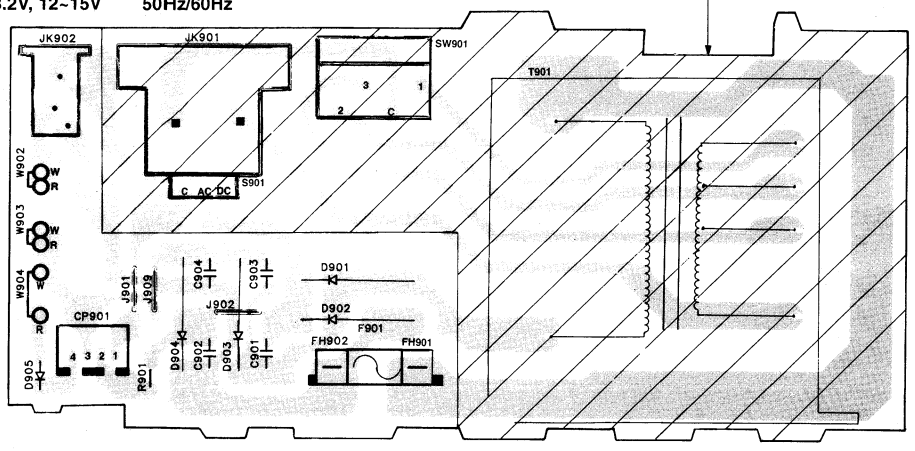
A SERVO P.C.B (REP1650A-N)



AC IN
1... 230V~250V
2... 200V~220V
3... 110V~127V
50Hz/60Hz

DC IN
13.2V, 12~15V

CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not touch this portion.

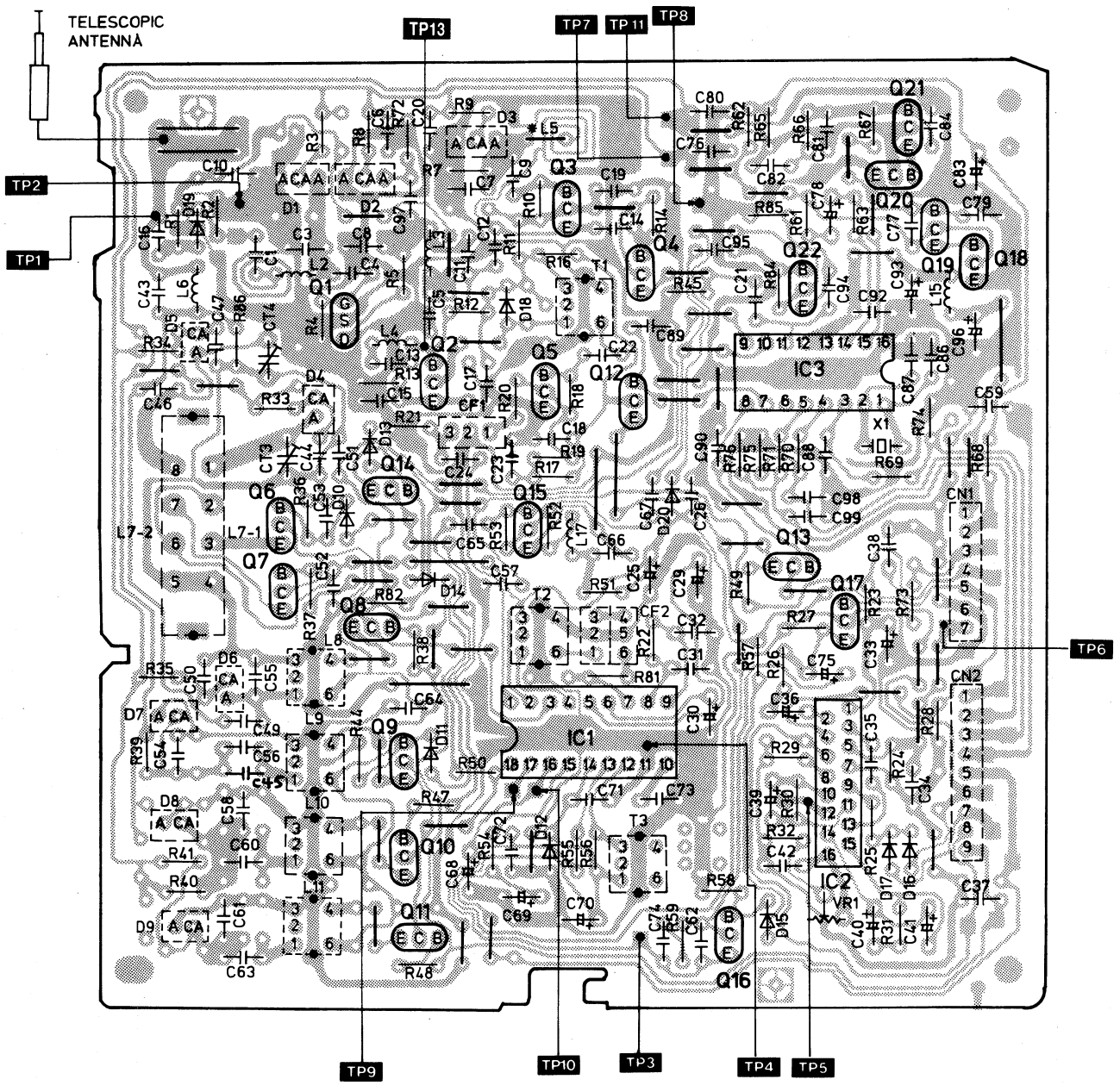


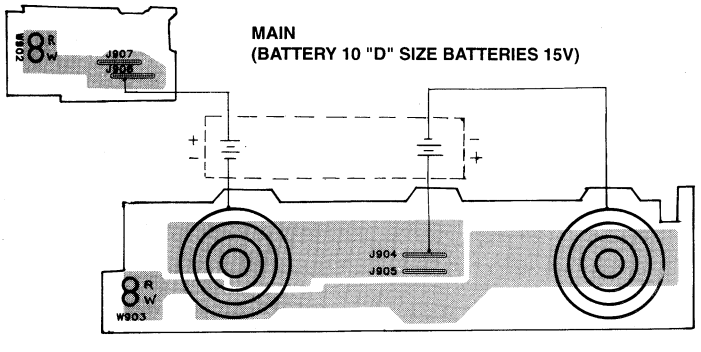
G POWER SUPPLY P.C.B (REPX0085C)

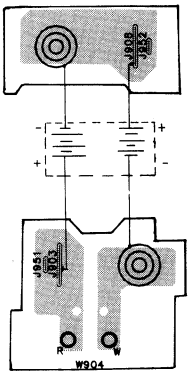
1 2 3 4 5

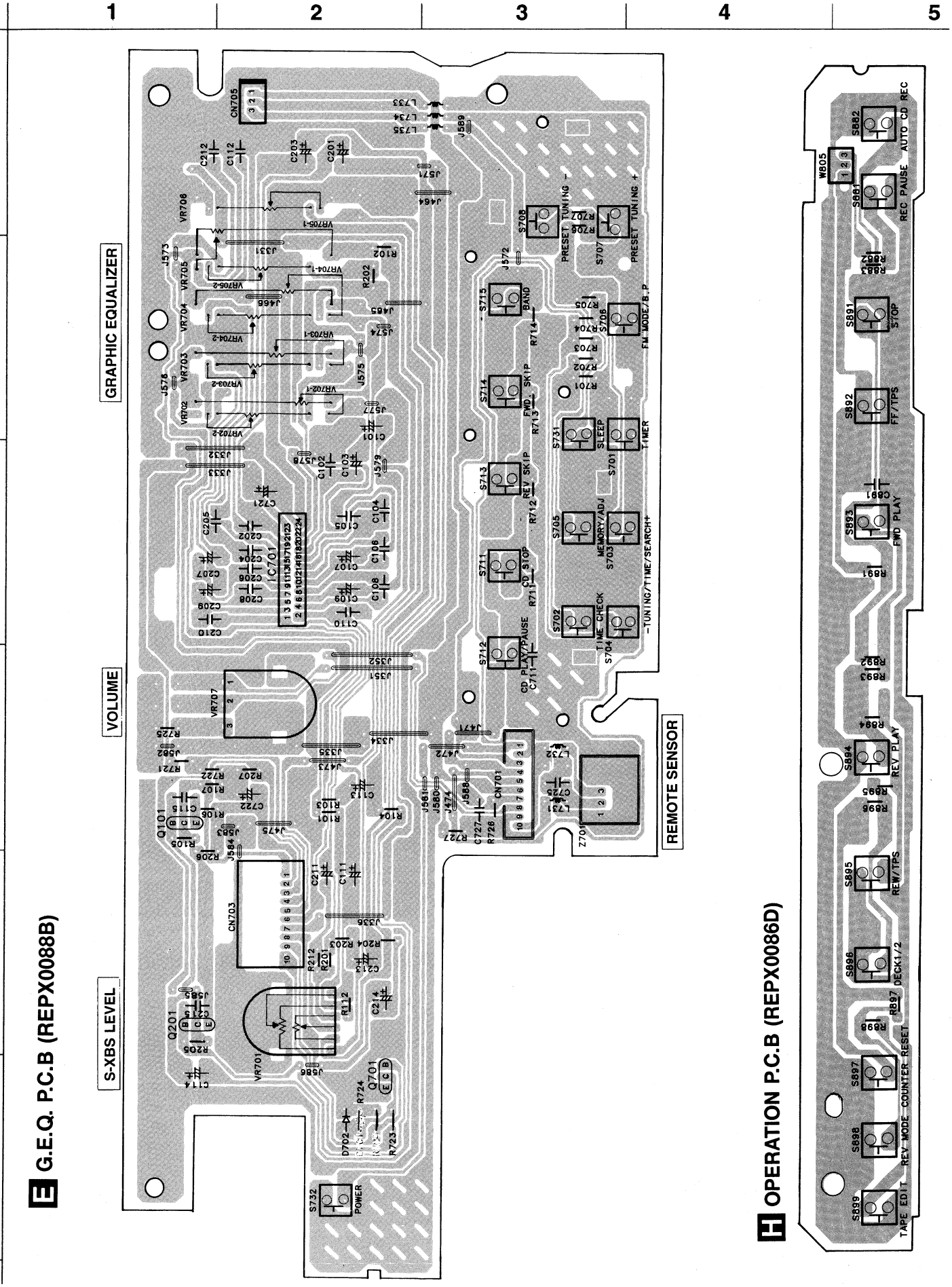
A B C D E F

B TUNER P.C.B (REP0930C)









E G.E.Q. P.C.B (REPX0088B)

H OPERATION P.C.B (REPX0086D)

■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

< for Operation Switch circuit and GEQ circuit > (Page 32)

- **S701** : Timer switch
- **S702** : Time check switch
- **S703** : (+) tuning/timer switch
- **S704** : (–) tuning/time switch
- **S705** : Memory/adjust switch
- **S706** : FM mode/B.P. switch
- **S707** : (+) preset tuning switch
- **S708** : (–) preset tuning switch
- **S711** : CD stop switch
- **S712** : CD play/pause switch
- **S713** : Reverse skip switch
- **S714** : Forward skip switch
- **S715** : Band switch
- **S731** : Sleep switch
- **S732** : Power switch
- **S881** : Record pause switch
- **S882** : Auto CD record switch
- **S891** : Cassette stop switch
- **S892** : Cassette FF/TPS switch
- **S893** : Cassette forward play
- **S894** : Cassette reverse play
- **S895** : Cassette REW/TPS switch
- **S896** : Deck 1/2 switch
- **S897** : Counter reset switch
- **S898** : Reverse mode switch
- **S899** : Tape edit switch
- **VR701-1 ~ VR701-2** : S-XBS control
- **VR702-1 ~ VR702-2** : Equaliser control (330Hz)
- **VR703-1 ~ VR703-2** : Equaliser control (1kHz)
- **VR704-1 ~ VR704-2** : Equaliser control (3.3kHz)
- **VR705-1 ~ VR705-2** : Equaliser control (10kHz)
- **VR706** : Balance control
- **VR707** : Volume control

< for Deck circuit > (Page 33 - 35)

- **S951** : Deck 1 mode detect switch.
- **S952** : Deck 1 tape detect switch.
- **S953** : Deck 1 CrO_2 detect switch.
- **S971** : Deck 2 mode detect switch.
- **S972** : Deck 2 tape detect switch.
- **S973** : Deck 2 tab switch.
- **S974** : Deck 2 tab switch.
- **S975** : Deck 2 CrO_2 detect switch.
- **VR601** : Deck 2 high speed control.
- **VR602** : Deck 2 normal speed control.
- **VR603** : Deck 1 normal speed control.

< for Main circuit and Power Supply circuit > (Page 36 - 37)

- **S901** : AC/DC switch (JK901)

< for Panel circuit > (Page 38 - 39)

- **S801** : CD open/close switch
- **S802** : CD LD switch

< for Servo circuit > (Page 40 - 41)

- **S701** : Reset switch

< for Tuner circuit > (Page 42 - 43)

- **VR1** : Tuner adjustment control.

< Gerenal >

•Battery Current

Vol. min	0.57mA (AM)	Vol. max	1.50mA (AM)
	0.57mA (FM)		1.50mA (FM)
	0.42mA (Tape)		1.45mA (Tape)
	0.55mA (CD)		3.66mA (CD)
Recording	0.49mA		

(Measurement condition:
Radio : FM 60 dB, 30%mod
AM 74 dB/m, 30%mod
Tape : 315 Hz, 0dB
CD : 1kHz, 0dB)

•Signal line

: +B line
: –B line
: Main signal line
: AM (LW/MW)OSC signal line
: Playback signal line
: Record signal line
: CD signal line
: FM signal line
: Vcap signal line
: FM OSC signal line

•The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

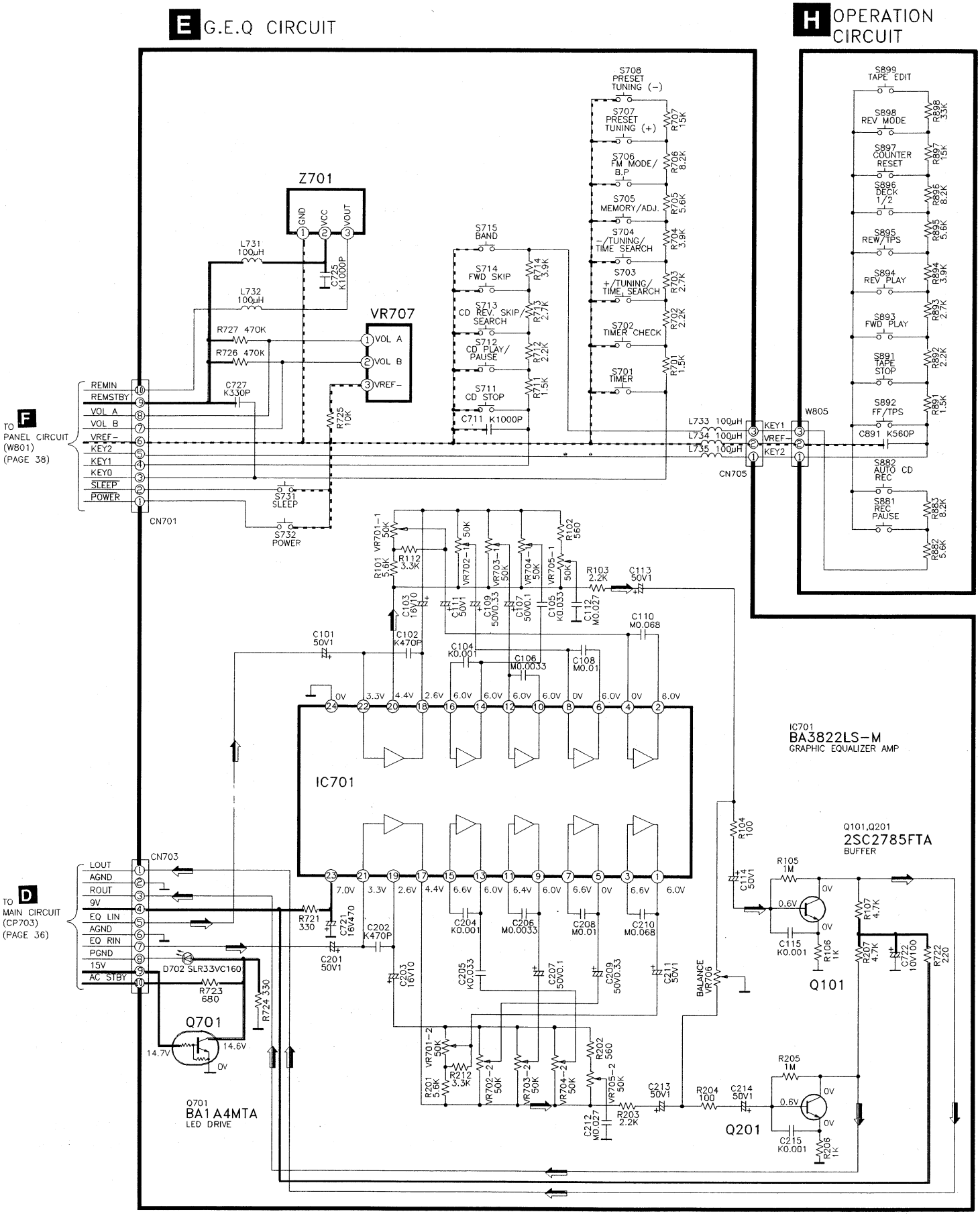
No mark : Playback << >>.....Tape Recording (( )) : CD ( ) ..... AM(MW/SW) < > ..... FM

•Importance safety notice:

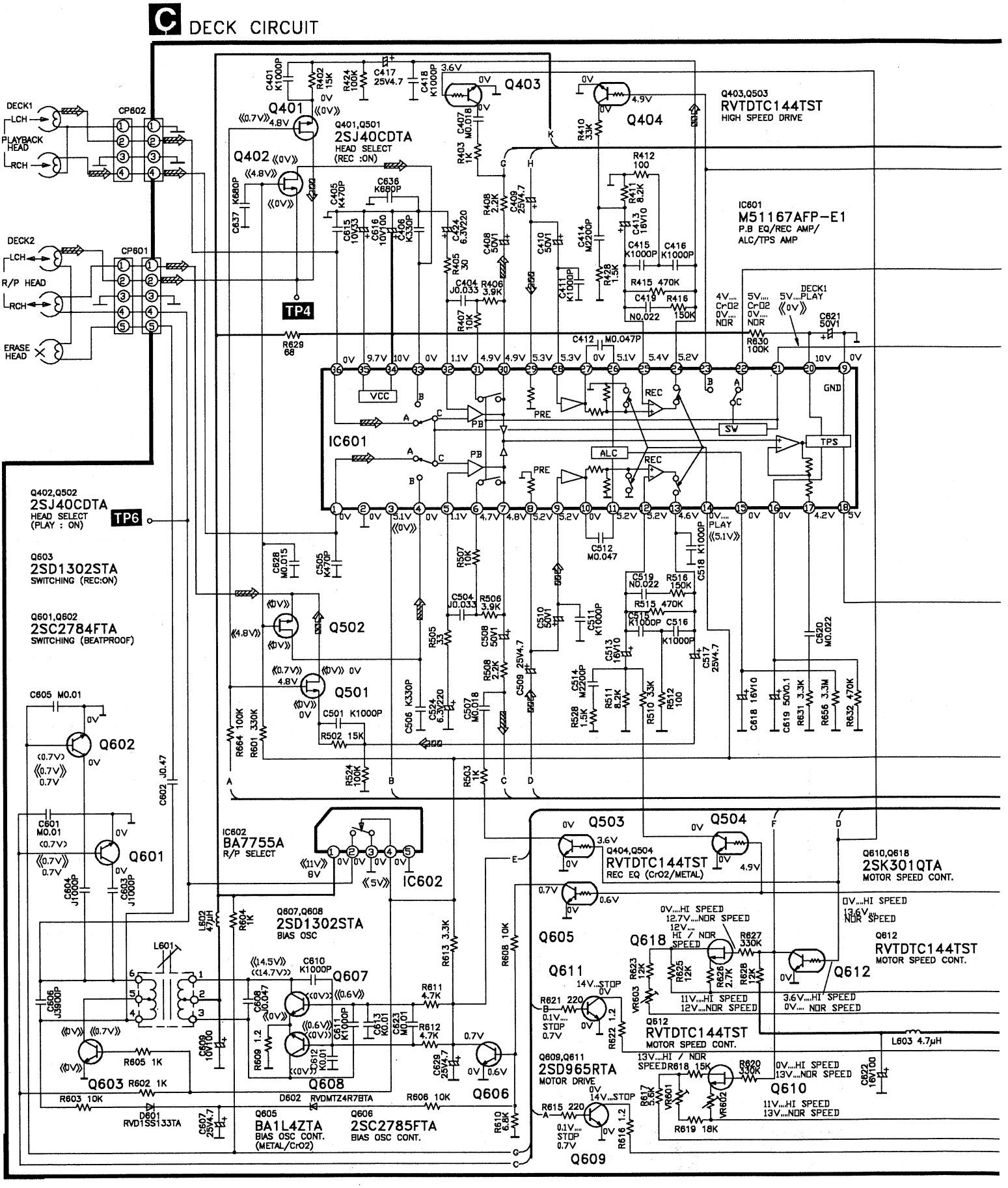
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

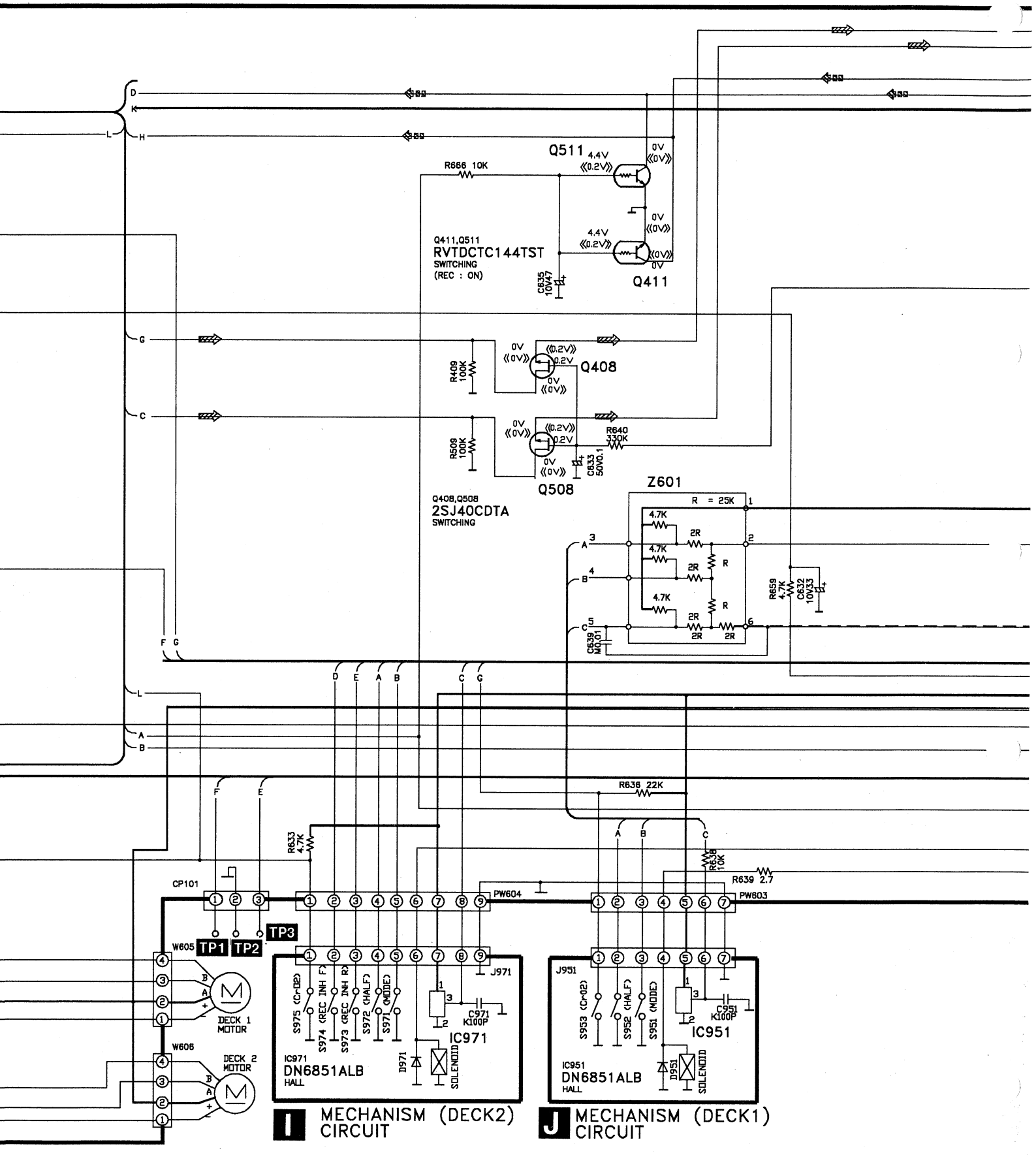
Caution !

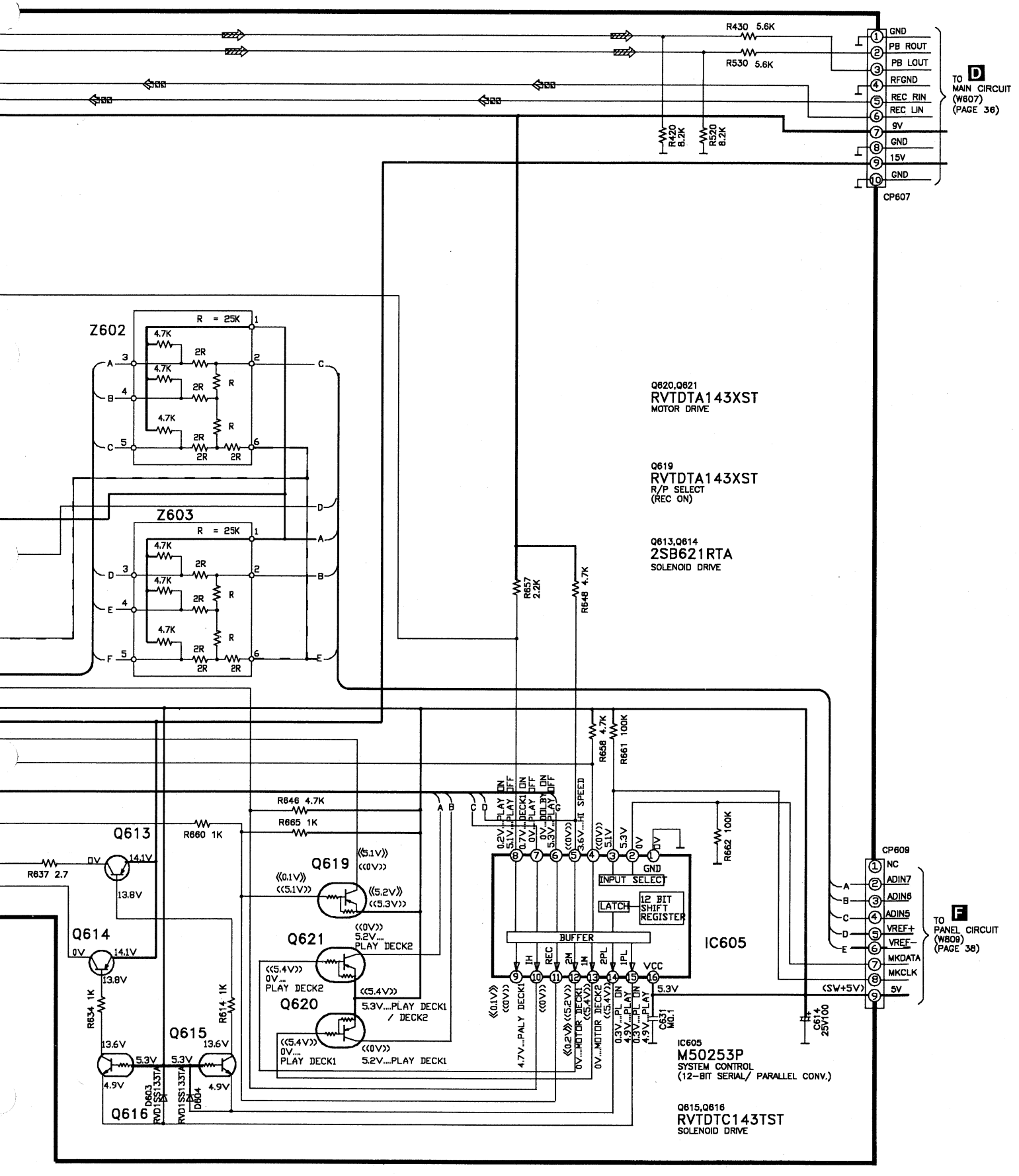
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Ground the soldering iron.
•Put a conductive mat on the work table.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.


E G.E.Q CIRCUIT
H OPERATION CIRCUIT
F TO PANEL CIRCUIT (W801) (PAGE 38)
D TO MAIN CIRCUIT (CP703) (PAGE 36)
CN701
CN703
CN705
W805
Z701
VR707
IC701
BA3822LS-M
GRAPHIC EQUALIZER AMP
Q701
BA1A4MTA
LED DRIVE
Q101,Q201
2SC2785FTA
BUFFER
Q101
Q201
D702 SLR33VC160
S708 PRESET TUNING (-)
S707 PRESET TUNING (+)
S706 FM MODE/ B.P
S705 MEMORY/ADJ.
S704 -/TUNING/ TIME SEARCH
S703 +/TUNING/ TIME SEARCH
S702 TIMER CHECK
S701 TIMER
S715 BAND
S714 FWD SKIP
S713 CD REV. SKIP/ SEARCH
S712 CD PLAY/ PAUSE
S711 CD STOP
S731 SLEEP
S732 POWER
S899 TAPE EDIT
S898 REV MODE
S897 COUNTER RESET
S896 DECK 1/2
S895 REW/TPS
S894 REV PLAY
S893 FWD PLAY
S891 TAPE STOP
S892 FF/TPS
S882 AUTO CD REC
S881 REC PAUSE
REMIN
REMSTBY
VOL A
VOL B
VREF-
KEY2
KEY1
KEY0
SLEEP
POWER
LOUT
AGND
ROUT
9V
EQ LIN
AGND
EQ RIN
PGND
15V
AC STBY
KEY1
VREF-
KEY2
GND
VCC
VOUT
VOL A
VOL B
VREF-
BALANCE VR706

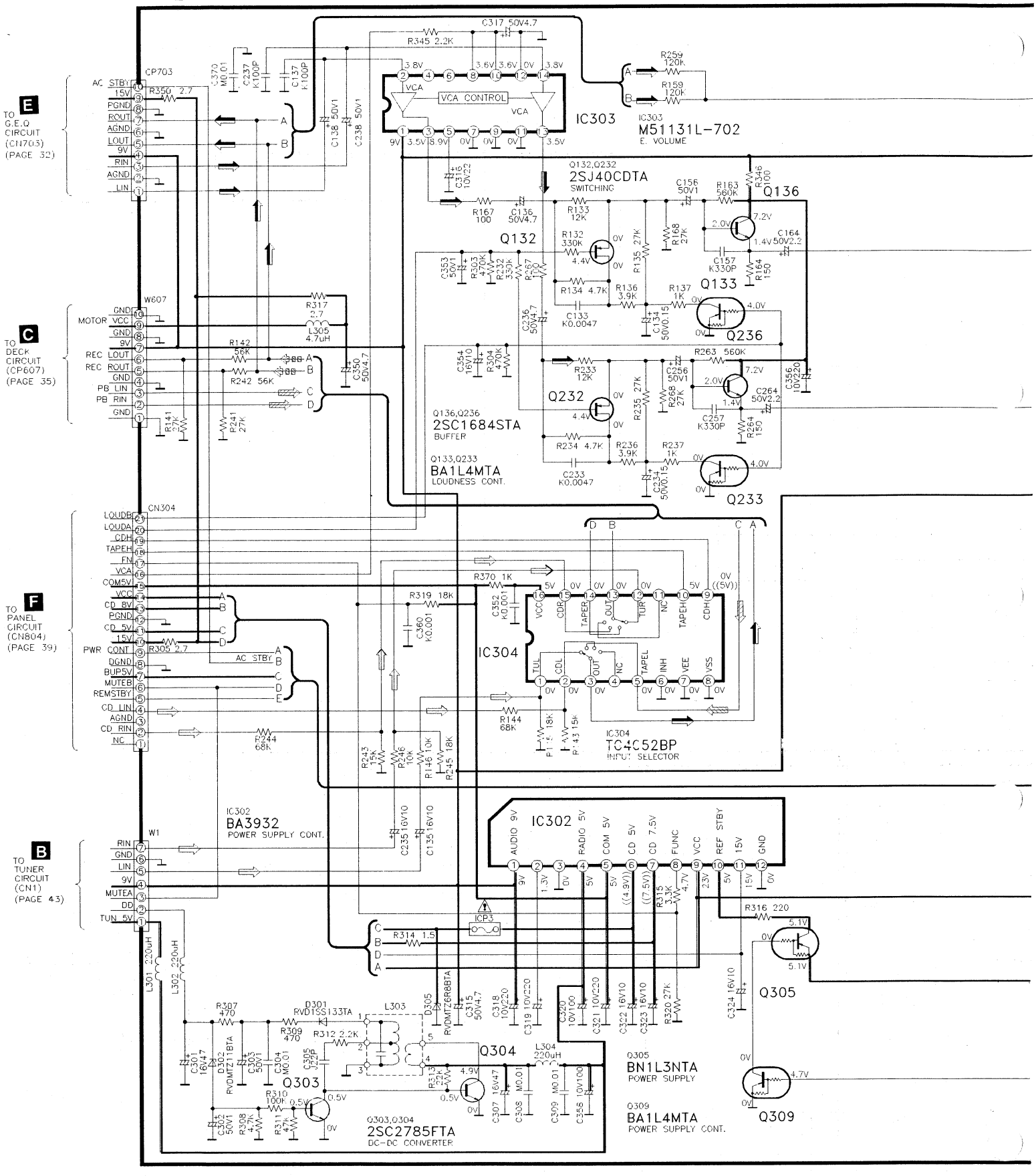
C DECK CIRCUIT

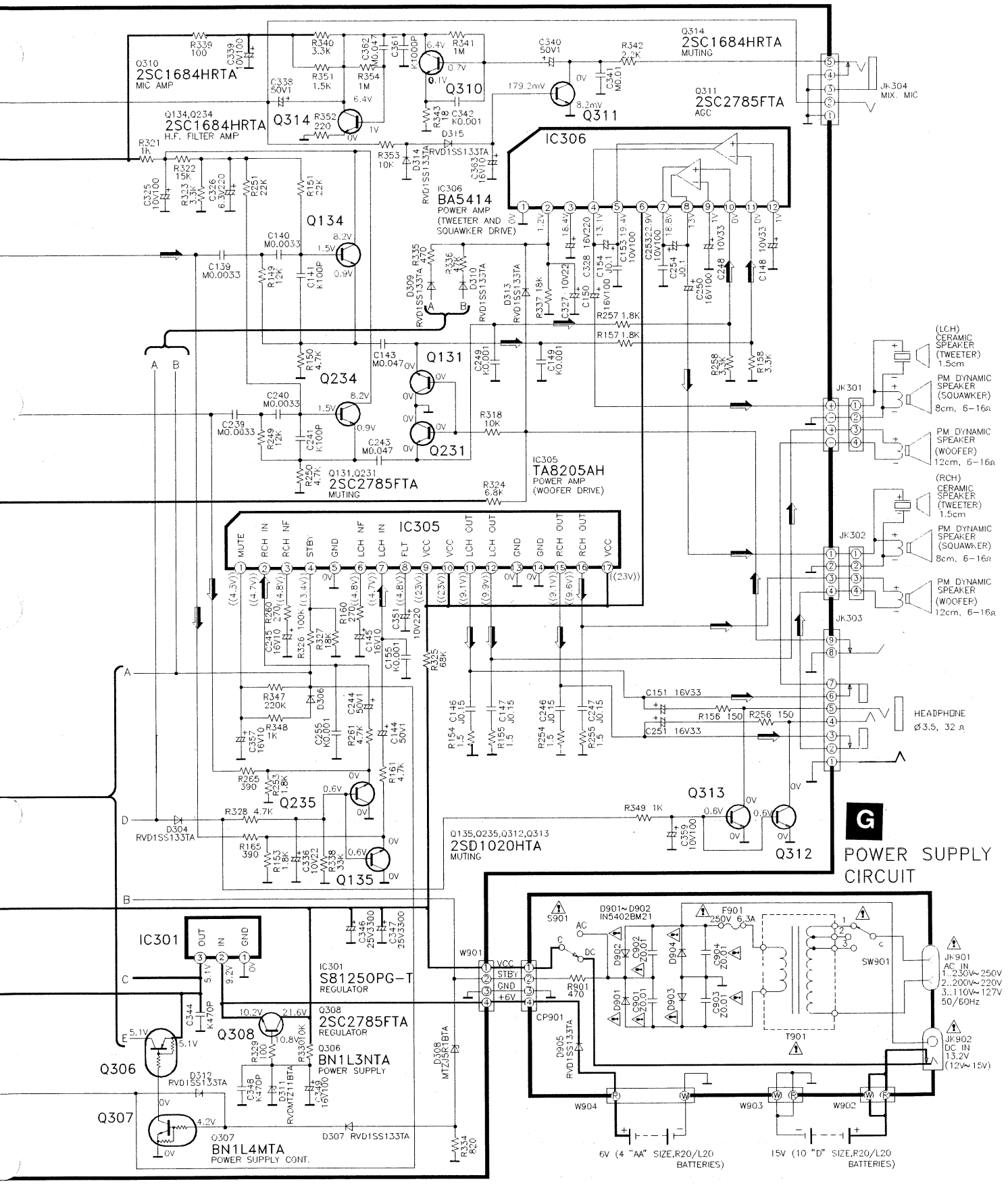



Q511
R666 10K
Q411,Q511
RVTDCTC144TST
SWITCHING
(REC : ON)
Q411
Q408
R409 100K
R509 100K
R640 330K
Q508
Q408,Q508
2SJ40CDTA
SWITCHING
Z601
R = 25K
4.7K
2R
R
R659 4.7K
C632 10V33
C639 MQ01
R636 22K
R633 4.7K
R638 10K
R639 2.7
CP101
PW604
PW803
TP1
TP2
TP3
W605
W606
DECK 1 MOTOR
DECK 2 MOTOR
J971
J951
S975 (CrO2)
S974 (REC INH F)
S973 (REC INH R)
S972 (HALF)
S971 (MODE)
S953 (CrO2)
S952 (HALF)
S951 (MODE)
C971 K100P
C951 K100P
IC971
IC951
IC971 DN6851ALB HALL
IC951 DN6851ALB HALL
D971
D951
SOLENOID
I MECHANISM (DECK2) CIRCUIT
J MECHANISM (DECK1) CIRCUIT

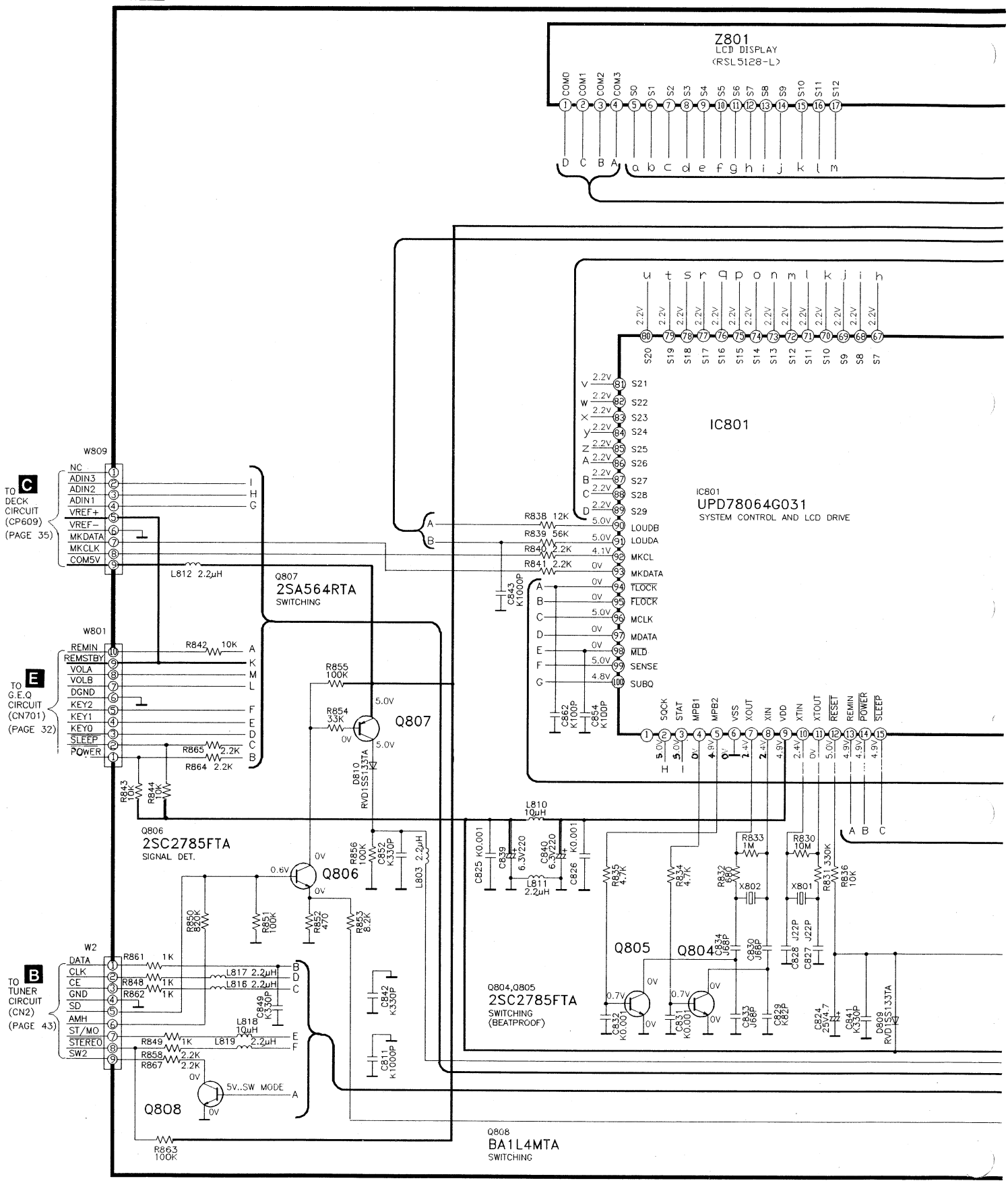

R430 5.6K
R530 5.6K
R420 8.2K
R520 8.2K
GND
PB ROUT
PB LOUT
RFGND
REC RIN
REC LIN
9V
GND
15V
GND
CP607
TO D MAIN CIRCUIT (W607) (PAGE 36)
Z602
R = 25K
4.7K
2R
R
Z603
Q620,Q621
RVTDTA143XST
MOTOR DRIVE
Q619
RVTDTA143XST
R/P SELECT
(REC ON)
Q613,Q614
2SB621RTA
SOLENOID DRIVE
R657 2.2K
R648 4.7K
R658 4.7K
R661 100K
R662 100K
R646 4.7K
R665 1K
R660 1K
R637 2.7
Q613
Q614
Q615
Q616
Q619
Q620
Q621
14.1V
13.8V
13.6V
5.3V
4.9V
R634 1K
R614 1K
D603 RVD1SS133TA
D604 RVD1SS133TA
PLAY DECK2
PLAY DECK1 / DECK2
PLAY DECK1
5.3V....PLAY DECK1
INPUT SELECT
LATCH
12 BIT SHIFT REGISTER
BUFFER
IC605
GND
VCC
REC
1H
2H
1M
2PL
1PL
C631 M0.1
C614 25V100
IC605
M50253P
SYSTEM CONTROL
(12-BIT SERIAL/ PARALLEL CONV.)
Q615,Q616
RVTDTC143TST
SOLENOID DRIVE
CP609
NC
ADIN7
ADIN6
ADIN5
VREF+
VREF-
MKDATA
MKCLK
5V
TO F PANEL CIRCUIT (W609) (PAGE 38)

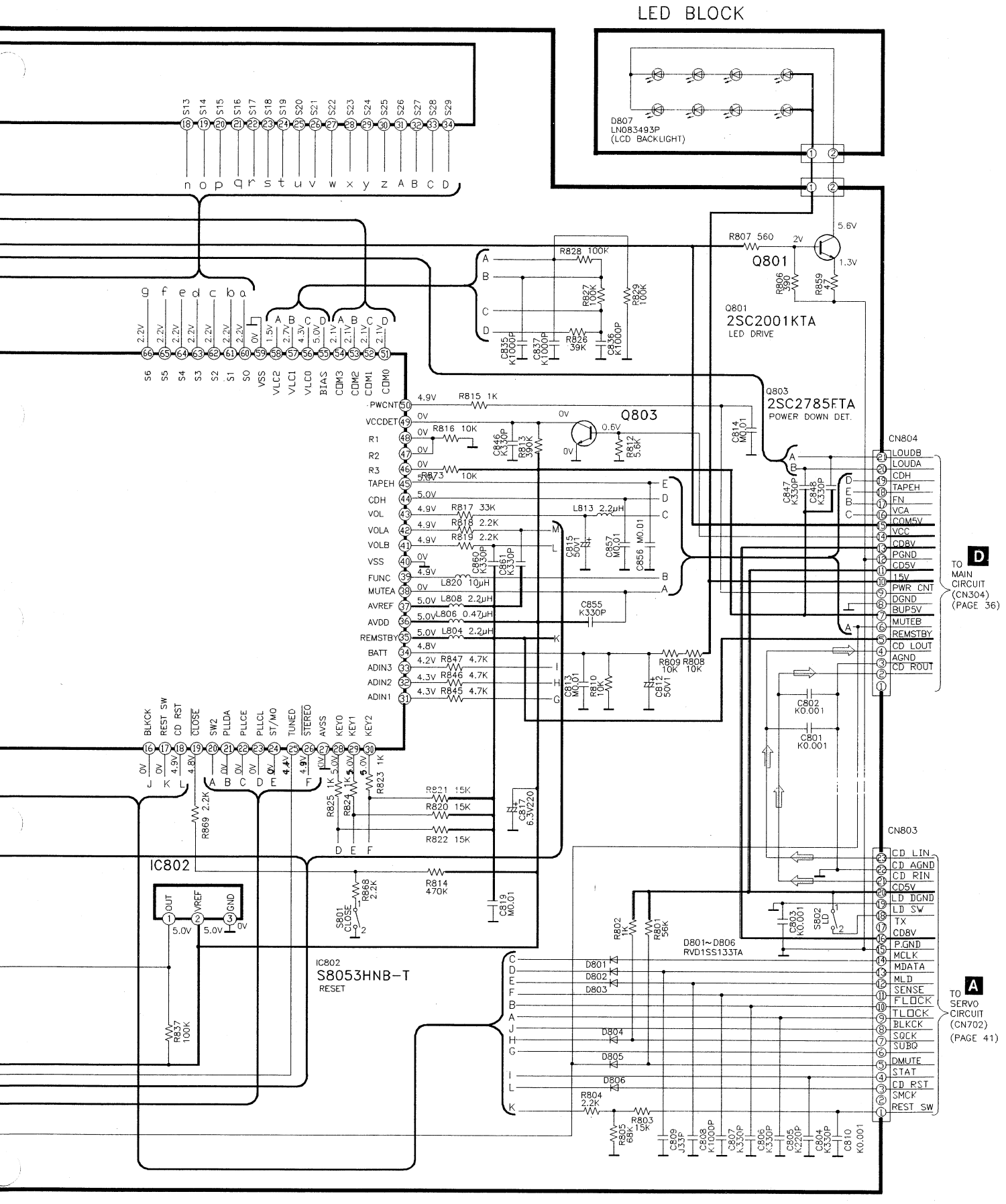
D MAIN CIRCUIT



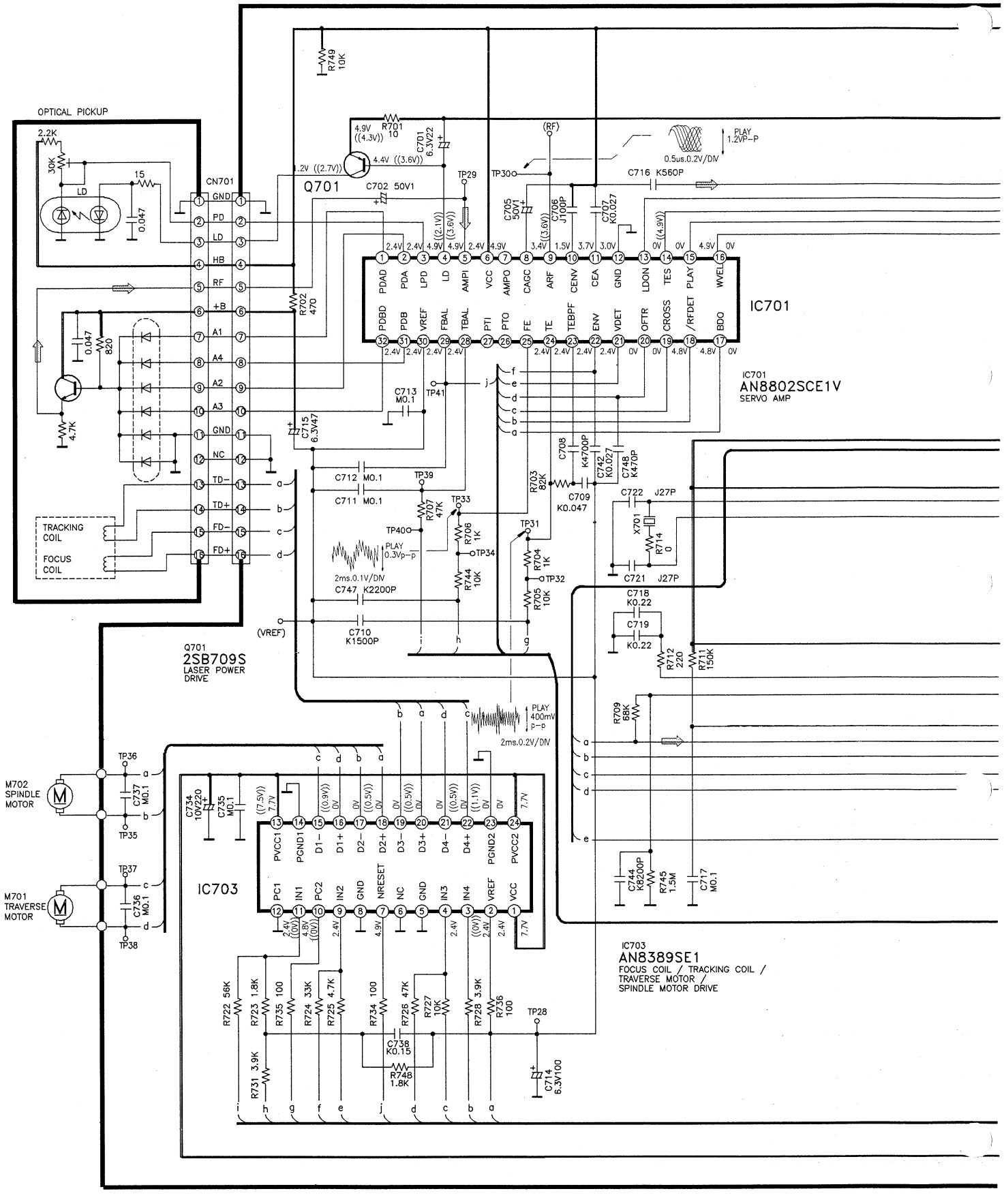

Q310
2SC1684HRTA
MIC AMP
Q134,Q234
2SC1684HRTA
H.F. FILTER AMP
Q314
2SC1684HRTA
MUTING
Q311
2SC2785FTA
AGC
IC306
BA5414
POWER AMP
(TWEETER AND
SQUAWKER DRIVE)
Q134
Q234
Q131
Q231
Q131,Q231
2SC2785FTA
MUTING
IC305
TA8205AH
POWER AMP
(WOOFER DRIVE)
IC305
MUTE
RCH IN
RCH NF
STBY
GND
LCH NF
LCH IN
FLT
VCC
VCC
LCH OUT
LCH OUT
GND
GND
RCH OUT
RCH OUT
VCC
Q235
Q135
Q135,Q235,Q312,Q313
2SD1020HTA
MUTING
Q313
Q312
IC301
S81250PG-T
REGULATOR
Q308
2SC2785FTA
REGULATOR
Q306
BN1L3NTA
POWER SUPPLY
Q307
BN1L4MTA
POWER SUPPLY CONT.
D307 RVD1SS133TA
W901
VCC
STBY
GND
+6V
D901~D902
IN5402BM21
F901
250V 6.3A
SW901
T901
CP901
JK901
AC IN
1..230V~250V
2..200V~220V
3..110V~127V
50/60Hz
JK902
DC IN
13.2V
(12V~15V)
W904
W903
W902
6V (4 "AA" SIZE,R20/L20
BATTERIES)
15V (10 "D" SIZE,R20/L20
BATTERIES)
JK304
MIX. MIC
JK301
JK302
JK303
(LCH)
CERAMIC
SPEAKER
(TWEETER)
1.5cm
PM DYNAMIC
SPEAKER
(SQUAWKER)
8cm, 6–16Ω
PM DYNAMIC
SPEAKER
(WOOFER)
12cm, 6–16Ω
(RCH)
CERAMIC
SPEAKER
(TWEETER)
1.5cm
PM DYNAMIC
SPEAKER
(SQUAWKER)
8cm, 6–16Ω
PM DYNAMIC
SPEAKER
(WOOFER)
12cm, 6–16Ω
HEADPHONE
Ø3.5, 32 Ω
G
POWER SUPPLY
CIRCUIT

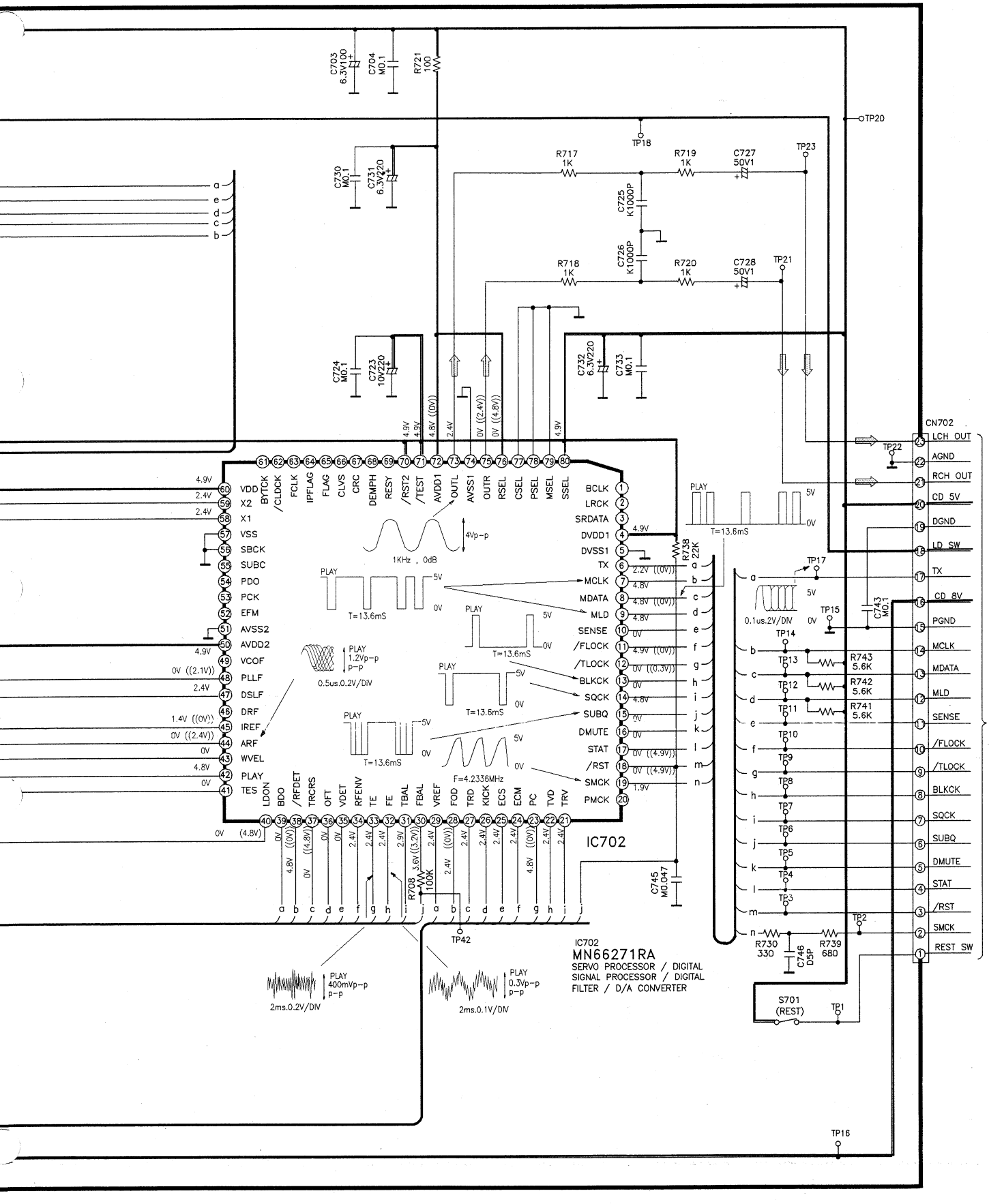
F PANEL CIRCUIT



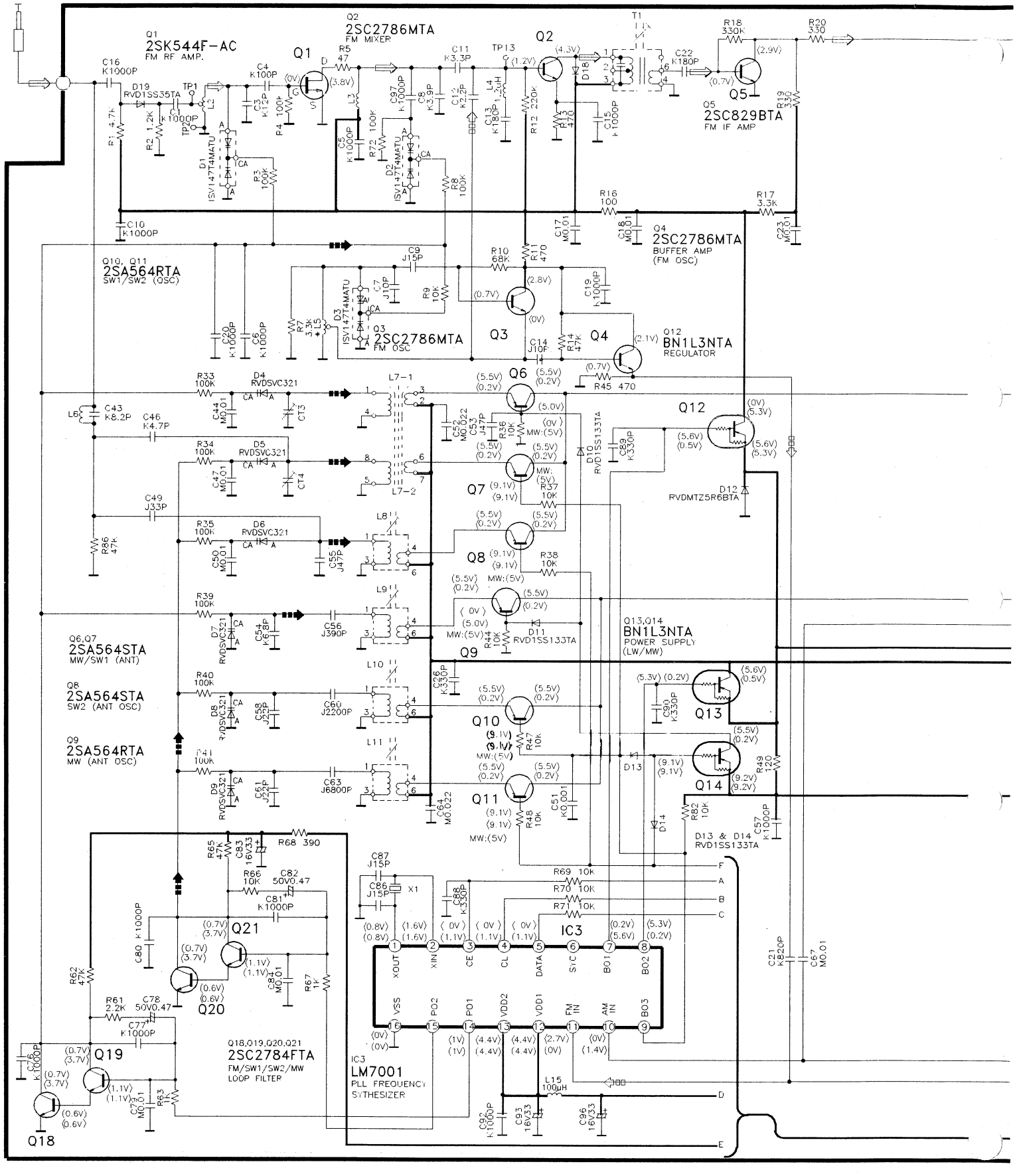

LED BLOCK
D807
LN083493P
(LCD BACKLIGHT)
Q801
2SC2001KTA
LED DRIVE
Q803
2SC2785FTA
POWER DOWN DET.
IC802
S8053HNB-T
RESET
D801~D806
RVD1SS133TA
CN804
CN803
TO D MAIN CIRCUIT (CN304) (PAGE 36)
TO A SERVO CIRCUIT (CN702) (PAGE 41)

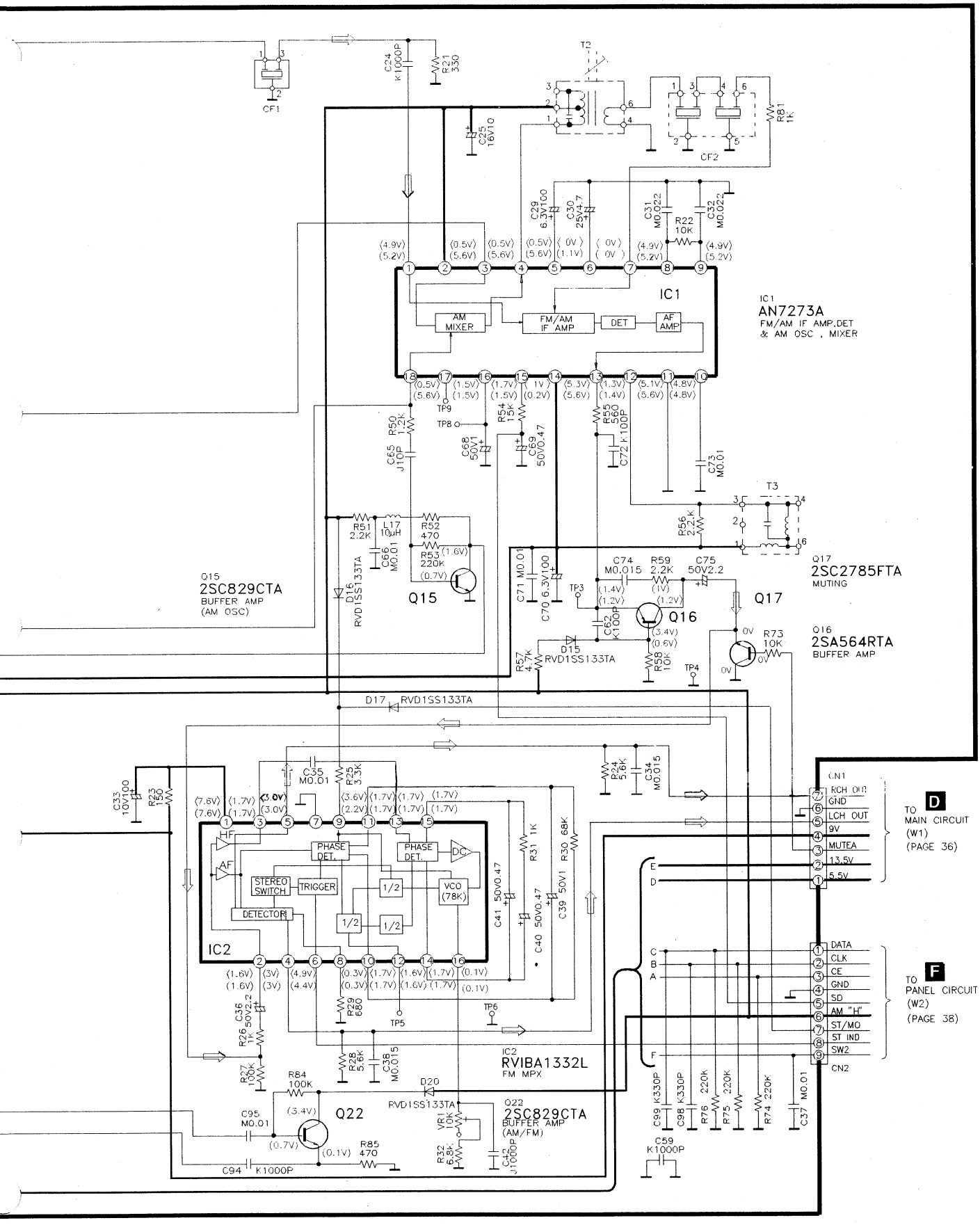
A SERVO CIRCUIT




IC702
MN66271RA
SERVO PROCESSOR / DIGITAL
SIGNAL PROCESSOR / DIGITAL
FILTER / D/A CONVERTER
CN702
TO F PANEL CIRCUIT (CN803) (PAGE 39)
S701 (REST)
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP20
TP21
TP22
TP23
TP42
C703 6.3V100
C704 M0.1
R721 100
C730 M0.1
C731 6.3V220
R717 1K
R719 1K
C727 50V1
C725 K1000P
C726 K1000P
R718 1K
R720 1K
C728 50V1
C724 M0.1
C723 10V220
C732 6.3V220
C733 M0.1
R738 22K
C745 M0.047
R743 5.6K
R742 5.6K
R741 5.6K
R730 330
C746 05P
R739 680
R708 100K
C743 M0.1
LCH OUT
AGND
RCH OUT
CD 5V
DGND
LD SW
TX
CD 8V
PGND
MCLK
MDATA
MLD
SENSE
/FLOCK
/TLOCK
BLKCK
SQCK
SUBQ
DMUTE
STAT
/RST
SMCK
REST SW
VDD
X2
X1
VSS
SBCK
SUBC
PDO
PCK
EFM
AVSS2
AVDD2
VCOF
PLLF
DSLF
DRF
IREF
ARF
WVEL
PLAY
TES
BCLK
LRCK
SRDATA
DVDD1
DVSS1
TX
MCLK
MDATA
MLD
SENSE
/FLOCK
/TLOCK
BLKCK
SQCK
SUBQ
DMUTE
STAT
/RST
SMCK
PMCK
LDON
BDO
/RFDET
TRCRS
OFT
VDET
RFENV
TE
FE
TBAL
FBAL
VREF
FOD
TRD
KICK
ECS
ECM
PC
TVD
TRV
1KHz , 0dB
4Vp-p
T=13.6mS
0.5us.0.2V/DIV
F=4.2336MHz
0.1us.2V/DIV
2ms.0.2V/DIV
2ms.0.1V/DIV
PLAY 1.2Vp-p p-p
PLAY 400mVp-p p-p
PLAY 0.3Vp-p p-p

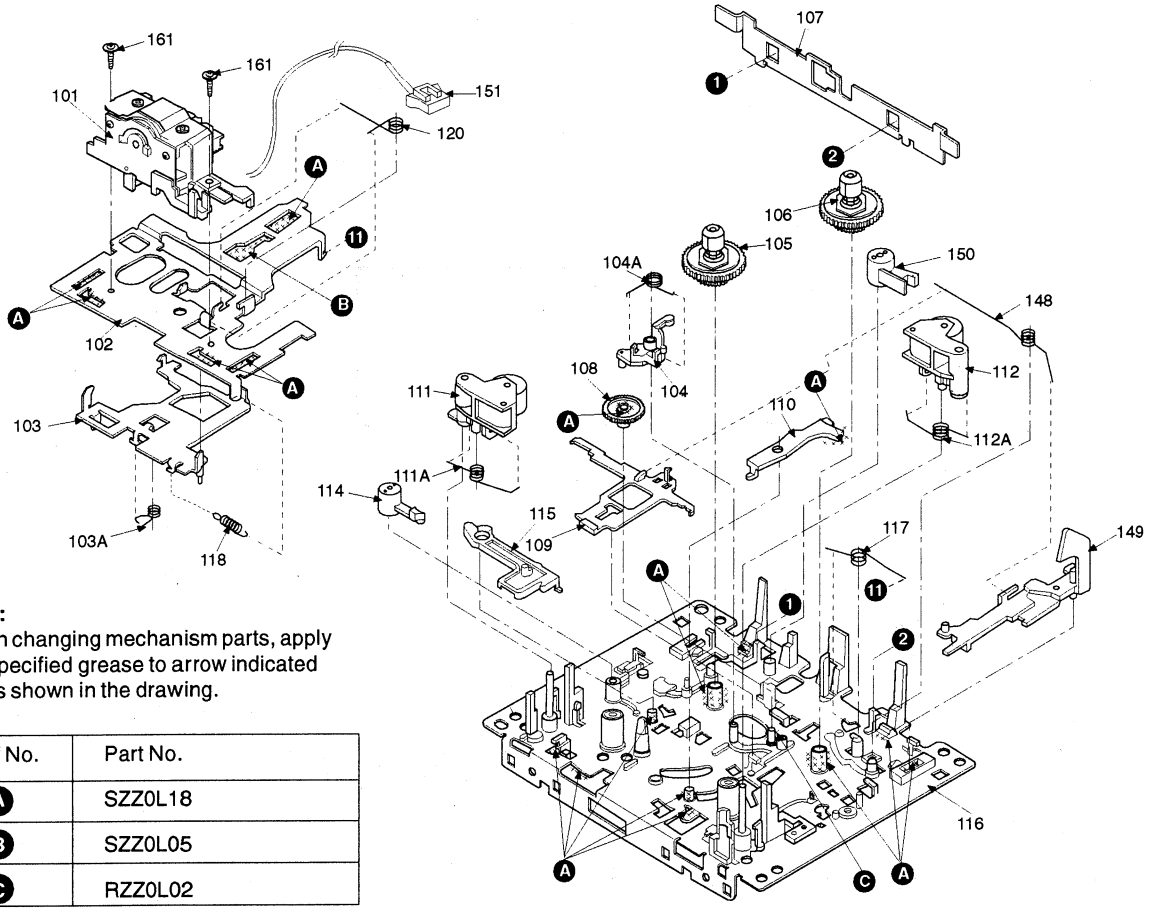
B TUNER CIRCUIT




IC1
AN7273A
FM/AM IF AMP.DET
& AM OSC , MIXER
AM MIXER
FM/AM IF AMP
DET
AF AMP
Q15
2SC829CTA
BUFFER AMP
(AM OSC)
Q16
Q17
2SC2785FTA
MUTING
Q16
2SA564RTA
BUFFER AMP
IC2
RVIBA1332L
FM MPX
Q22
2SC829CTA
BUFFER AMP
(AM/FM)
PHASE DET.
STEREO SWITCH
TRIGGER
VCO (78K)
DETECTOR
CN1
RCH OUT
GND
LCH OUT
9V
MUTEA
13.5V
5.5V
DATA
CLK
CE
GND
SD
AM "H"
ST/MO
ST IND
SW2
CN2
TO D MAIN CIRCUIT (W1) (PAGE 36)
TO F PANEL CIRCUIT (W2) (PAGE 38)

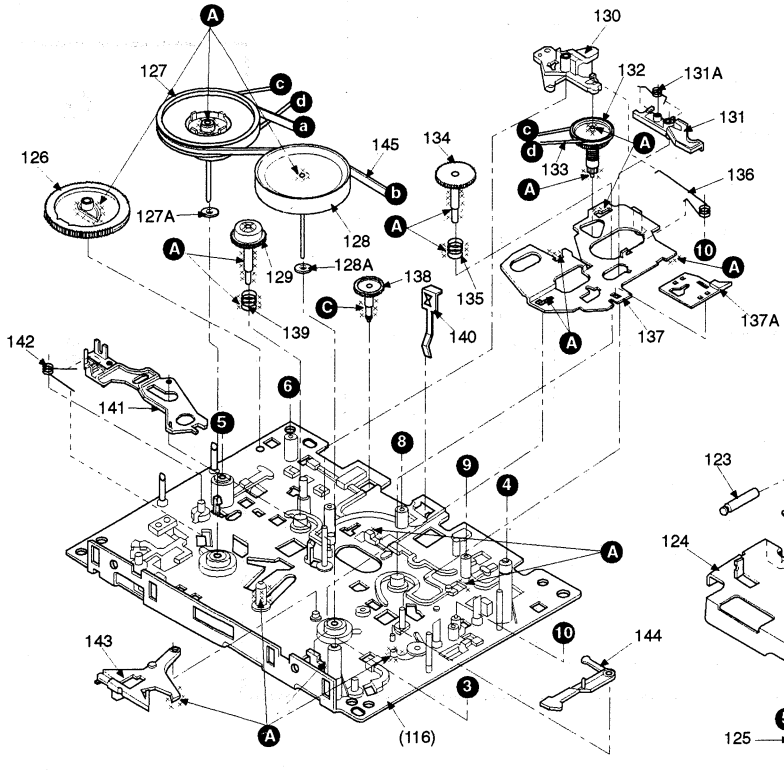
■ Mechanism Parts Location (RAA0370)

DECK 1(PLAYBACK)



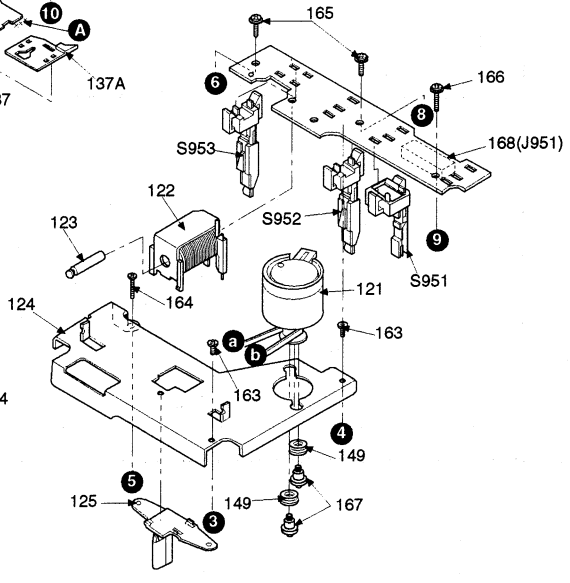
Note:
When changing mechanism parts, apply the specified grease to arrow indicated areas shown in the drawing.

Ref No.	Part No.
A	SZZ0L18
B	SZZ0L05
C	RZZ0L02



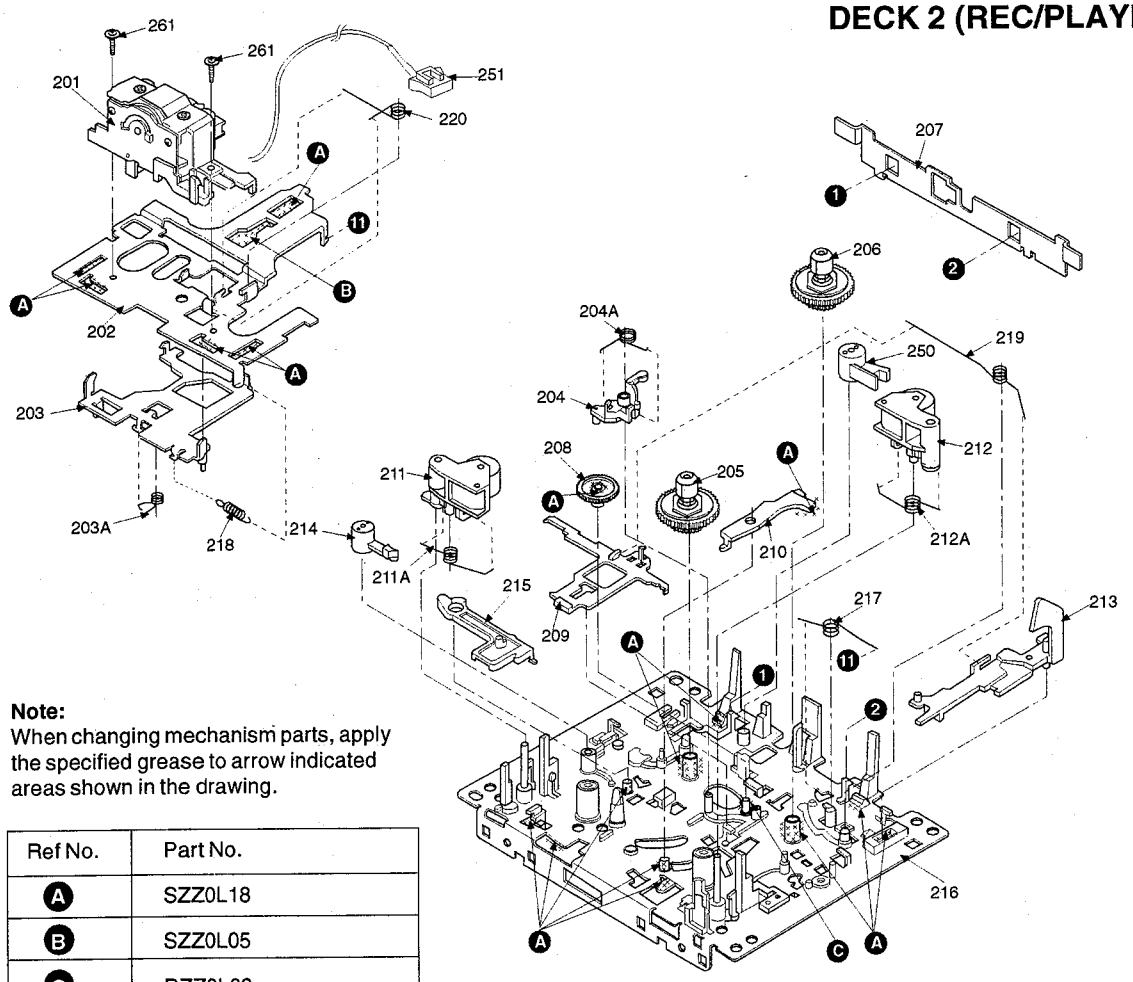
SPECIFICATION

Playback torque	30 ~ 60 g•cm
Fast forward torque	65 ~ 125 g•cm
Rewind torque	65 ~ 125 g•cm



■ Mechanism Parts Location (RAA0371)

DECK 2 (REC/PLAYBACK)

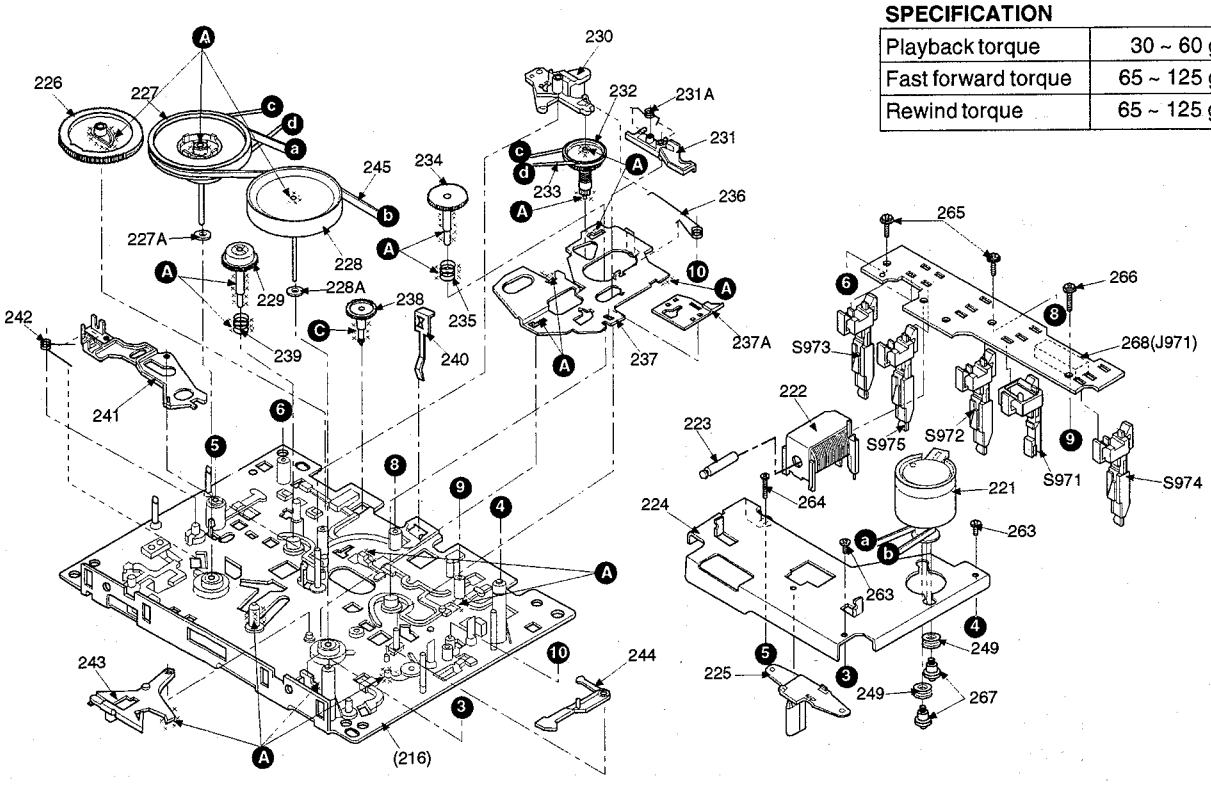


Note:
When changing mechanism parts, apply the specified grease to arrow indicated areas shown in the drawing.

Ref No.	Part No.
A	SZZ0L18
B	SZZ0L05
C	RZZ0L02

SPECIFICATION

Playback torque	30 ~ 60 g•cm
Fast forward torque	65 ~ 125 g•cm
Rewind torque	65 ~ 125 g•cm



■ Mechanism Parts List

Note : [M] mark in Remarks column indicates parts that are supplied by MESA.

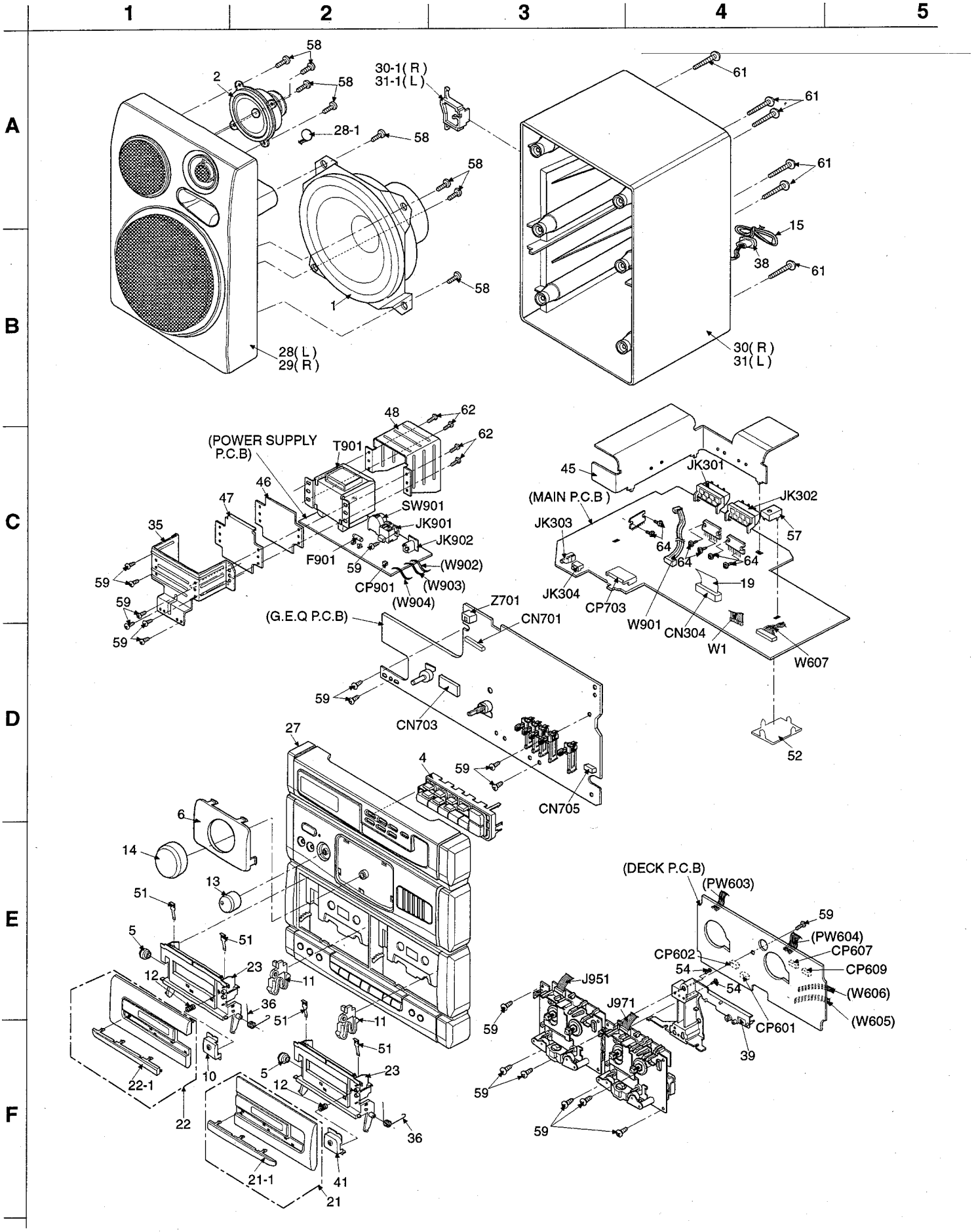
Ref. No	Part No.	Part Name & Description	Remarks
		CASSETTE DECK 1	
101	RXQ0383	HEAD BLOCK ASS'Y	
102	RUA793ZF	CHASSIS	
103	RZLAR300A	LEVER ASS'Y	
103A	RUW143ZA	SPRING	
104	1UB0089Z	ARM	
104A	RUW148ZA	SPRING	
105	1DM0018ZB	REEL TABLE ASS'Y	
106	1DM0017ZB	REEL TABLE ASS'Y	
107	RML0069-1	LEVER	
108	RDG5772ZC	GEAR	
109	RUB508ZB	LEVER	
110	RUB506ZB	LEVER	
111	1UB0088ZB	PINCH ROLLER	
111A	RUW141ZA	SPRING	
112	1UB0087ZB	PINCH ROLLER	
112A	RUW140ZB	SPRING	
114	RNL1ZD	ARM	
115	RUB503ZD	LEVER	
116	RZUAR300A	CHASSIS ASS'Y	
117	RUW142ZA	SPRING	
118	RUD105ZA	SPRING	
120	RUW139ZA	SPRING	
121	RFKPXDT680PK	MOTOR ASS'Y	[M]
122	1UE0015ZB	PLUNGER	
123	RUB428ZE	SHAFT	
124	RUL1030YA	PLATE	
125	RMD5014ZC	SPACER	
126	RDG5927ZG	GEAR	
127	1DW0037ZB	FLYWHEEL ASS'Y	
127A	RNW139ZA	WASHER	
128	1DW0038ZB	FLYWHEEL ASS'Y	
128A	RNW138ZA	WASHER	
129	1DG0006ZB	GEAR ASS'Y	
130	RUB513ZD	ARM	
131	1UB0091Z	LEVER	
131A	RUW146ZA	SPRING	
132	1DR0011ZB	PULLEY ASS'Y	
133	RDV90ZB	BELT	
134	RDG5769ZA	GEAR	
135	RUQ111ZB	SPRING	
136	RUW145ZA	SPRING	
137	1UB0090ZA	ROD	

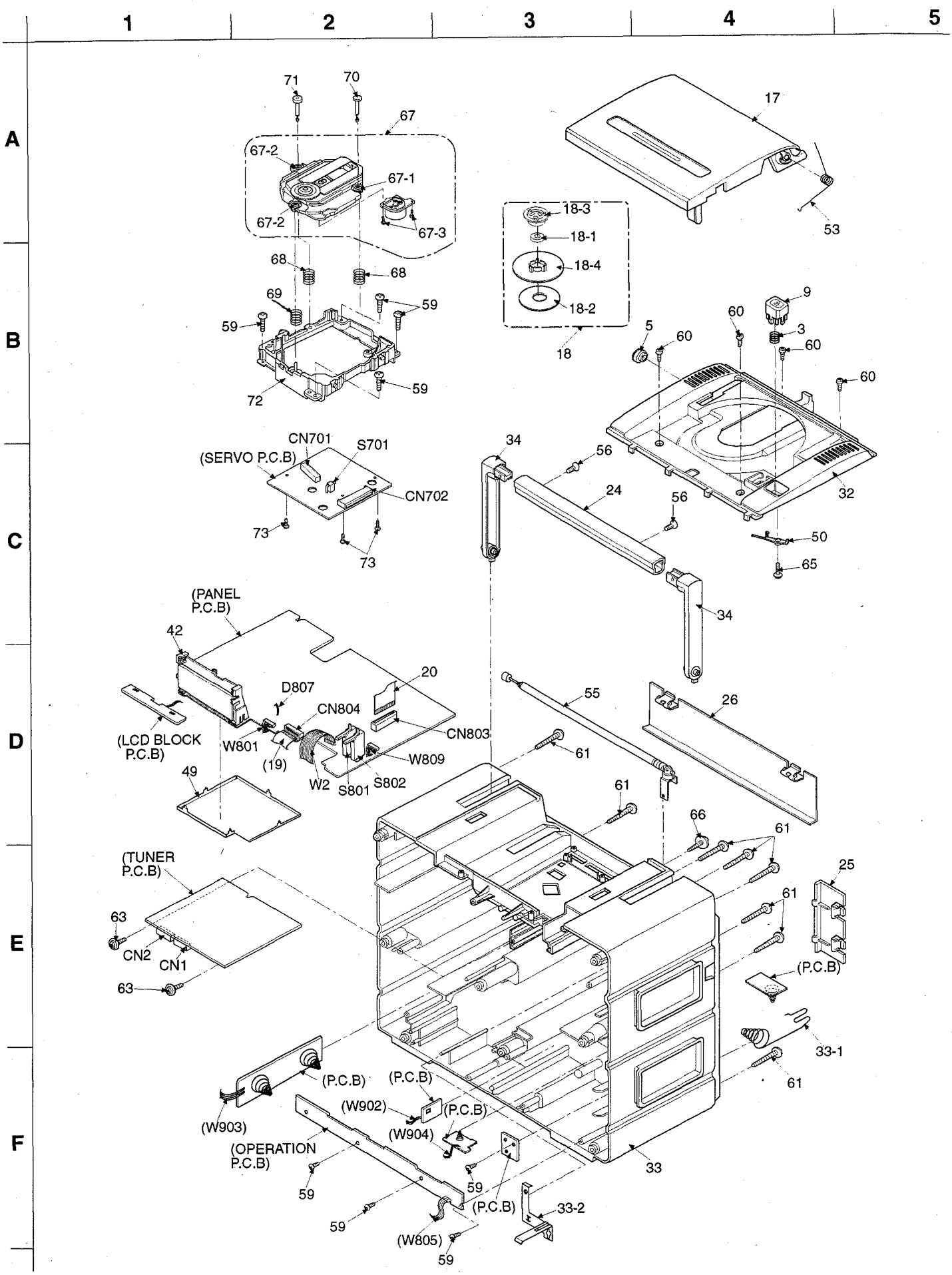
Ref. No	Part No.	Part Name & Description	Remarks
137A	RUB512ZB	ROD	
138	RDG5773ZB	GEAR	
139	RUQ112ZA	SPRING	
140	RUS609ZC	SPRING	
141	RUB514ZC	LEVER	
142	RUW147ZA	SPRING	
143	RUB515ZA	LEVER	
144	RUB509ZA	LEVER	
145	RDV108ZA	BELT	
146	RUB507ZD	LEVER	
148	RUW144ZA	SPRING	
149	RHG3032ZA	RUBBER	
150	RNL180ZB	LEVER	
151	REX0306	LEAD WIRE BLOCK (4P)	[M]
161	XTW2+6L	SCREW	
163	XTN26+7J	SCREW	
164	RHE5203ZA	SCREW	
165	XTW2+8S	SCREW	
166	XYC2+JF16	SCREW	
167	RHD26002	SCREW	
168	RJS7T7ZA	CONNECTOR (J951)	

Ref. No	Part No.	Part Name & Description	Remarks
		CASSETTE DECK 2	
201	RXQ0384	HEAD BLOCK ASS'Y	
202	RUA793ZF	HEAD PANEL	
203	RZLAR300A	LEVER ASS'Y	
203A	RUW143ZA	SPRING	
204	1UB0089Z	ARM	
204A	RUW148ZA	SPRING	
205	1DM0018ZB	REEL TABLE ASS'Y	
206	1DM0017ZB	REEL TABLE ASS'Y	
207	RML0069-1	LEVER	
208	RDG5772ZC	GEAR	
209	RUB508ZB	LEVER	
210	RUB506ZB	LEVER	
211	1UB0088ZB	PINCH ROLLER	
211A	RUW141ZA	SPRING	
212	1UB0087ZB	PINCH ROLLER	
212A	RUW140ZB	SPRING	
213	RUB507ZD	LEVER	
214	RNL1ZD	ARM	
215	RUB503ZD	LEVER	
216	RZUAR300A	CHASSIS ASS'Y	
217	RUW142ZA	SPRING	
218	RUD105ZA	SPRING	
219	RUW144ZA	SPRING	
220	RUW139ZA	SPRING	
221	RFKPXDT680PK	MOTOR ASS'Y	[M]
222	1UE0015ZB	PLUNGER	
223	RUB428ZE	SHAFT	
224	RUL1030ZE	PLATE	[M]
225	RMD5014ZC	SPACER	
226	RDG5927ZG	GEAR	
227	1DW0037ZB	FLYWHEEL ASS'Y	
227A	RNW139ZA	WASHER	
228	1DW0038ZB	FLYWHEEL ASS'Y	
228A	RNW138ZA	WASHER	
229	1DG0006ZB	GEAR ASS'Y	
230	RUB513ZD	ARM	
231	1UB0091Z	LEVER	
231A	RUW146ZA	SPRING	
232	1DR0011ZB	PULLEY ASS'Y	
233	RDV90ZB	BELT	
234	RDG5769ZA	GEAR	
235	RUQ111ZB	SPRING	
236	RUW145ZA	SPRING	
237	1UB0090ZA	ROD	
237A	RUB512ZB	ROD	

Ref. No	Part No.	Part Name & Description	Remarks
238	RDG5773ZA	GEAR	
239	RUQ112ZA	SPRING	
240	RUS609ZC	SPRING	
241	RUB514ZC	LEVER	
242	RUW147ZA	SPRING	
243	RUB515ZA	LEVER	
244	RUB509ZA	LEVER	
245	RDV108ZA	BELT	
249	RHG3032ZA	RUBBER	
250	RNL180ZB	LEVER	
251	REX0305	LEAD WIRE BLOCK	[M]
261	XTW2+6L	SCREW	
263	XTN26+7J	SCREW	
264	RHE5203ZA	SCREW	
265	XTW2+8S	SCREW	
266	XYC2+JF16	SCREW	
267	RHD26002	SCREW	
268	RJS10T7ZA	CONNECTOR (J971)	

■ Cabinet Parts Location

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18-1
18-4
18-2
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3
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32
50
65
34
56
24
CN701
S701
(SERVO P.C.B)
CN702
73
(PANEL P.C.B)
42
20
D807
CN804
CN803
(LCD BLOCK P.C.B)
W801
(19)
W2
S801
S802
W809
49
55
26
61
66
25
(TUNER P.C.B)
63
CN2
CN1
(P.C.B)
33-1
(W902)
(W904)
(W903)
(OPERATION P.C.B)
33
33-2
(W805)

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list .
* Warning : This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG : • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hertsteller spezifizierte einheit ausgetauscht werden.
* Remote Control Unit :
Supply period for three years from terminal of production.
* The "(SF)" mark denotes the standard part.
* [M] Indicates in the Remarks columns indicates parts supplied by **MESA.**

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	EASG12P463A2	SPEAKER WOOFER	[M]
2	EASG8PH63B2	SPEAKER SQUAWKER	[M]
3	RMB0244	CD EJECT BUTT SPRING	[M]
4	RGUX0103-H	CD/TUNER BUTTON SET	[M]
5	RDG0183-L	DAMPER GEAR	[M]
6	RGKX0007-H	VOL. KNOB ORNAMENT	[M]
9	RGUX0102-K	CD EJECT BUTTON	[M]
10	RGUX0105-K	EJECT BUTTON (L)	[M]
11	RML0220	CASS. EJECT LEVER	[M]
12	RMBX0009	CASS. EJECT SPRING	[M]
13	RGWX0018-H	S-XBS KNOB	[M]
14	RGWX0019-H	VOLUME KNOB	[M]
15	RJL4W001W22	SPEAKER CORD	[M]
17	RFKKDT690PK	CD LID ASS'Y	[M]
18	RFKNXDT680PB	CD CLAMPER ASS'Y	[M]
18-1	RHM245ZA	MAGNET	
18-2	RMG0144	CLAMPER RUBBER	
18-3	RMQ0152-E	FIXTURE	[M]
18-4	RMQ0225-K	CLAMPER	[M]
19	REEX0018	FFC WIRE	[M]
20	REE0397	FPC WIRE	[M]
21	RFKLDT690P1	CASS. LID ASS'Y (R)	[M]
21-1	RGKX0009-H	CASS. LID ORNAMENT (R)	[M]
22	RFKLDT690P2	CASS. LID ASS'Y (L)	[M]
22-1	RGKX0008-H	CASS. LID ORNAMENT (L)	[M]
23	RKFX0034-K	CASSETTE HOLDER	[M]
24	RKH0012-K	HANDLE BAR	[M]
25	RKK0035-K	BATTERY COVER (UM-3)	[M]
26	RKK347ZB-0	BATTERY COVER (UM-1)	[M]
27	RFKGDT690GCK	FRONT CAB. ASS'Y	[M]
28	RFKGDT690PK2	SP. FRONT CAB. ASS'Y (L)	[M]
28-1	EFBS10D49A3	SPEAKER TWEETER	[M]
29	RFKGDT690PK3	SP. FRONT CAB. ASS'Y (R)	[M]
30	RFKHDT690PK2	SP. REAR CAB. ASS'Y (R)	[M]
30-1	RMR0407	LOCK LEVER (R)	[M]

Ref No.	Part No.	Part Name & Description	Remarks
31	RFKHDT690PK3	SP. REAR CAB. ASS'Y (L)	[M]
31-1	RMR0408	LOCK LEVER (L)	[M]
32	RKQX0004-K	TOP CABINET	[M]
33	RFKHDT690GCK	REAR CAB. ASS'Y	[M]
33-1	RJC91003	+- BATTERY TERMINAL	[M]
33-2	RJR0074	ANTENNA PLATE	[M]
34	RKX0021-K	HANDLE ARM	[M]
35	RMAX0014	TRANS. BRACKET	[M]
36	RME0081-1	OPEN SPRING	[M]
38	RMG0166	CORD BUSHING	[M]
39	RMK0059-1E	C-MECH DOCKING CHASS	[M]
41	RGUX0106-K	EJECT BUTTON (R)	[M]
42	RMN0118	LCD HOLDER	[M]
45	RMYX0012	HEAT SINK	[M]
46	RSCX0026	TRANS. SHIELD PLATE	[M]
47	RSCX0027	TRANS. SHIELD PLATE	[M]
48	RSCX0028	TRANS. SHIELD PLATE	[M]
49	RSCX0029	SHIELD PLATE	[M]
50	RUL1136ZA	CD EJECT LEVER	[M]
51	RUS757ZAA	CASS. HALF SPRING	[M]
52	RMC1228ZA	DD BACK SHIELD PLATE	[M]
53	RUW217ZA	OPEN SPRING	[M]
54	XTV26+6F	MECHA CHASSIS SCREW	
55	XEARR175ED-Y	ROD ANTENNA	
56	XTC3+10CFN	HANDLE SCREW	
57	RMC1227ZA	DD SHIELD COVER	[M]
58	XTV3+10G	SPEAKER SCREW	
59	XTV3+12G-M	MOUNTING SCREW	[M]
60	XTV3+12GFZ	TOP CAB SCREW	
61	XTV3+20G	CASING SCREW	
62	XTV3+8F	TRANS. BRACKET SCREW	
63	XTWS3+10Q	TUNER PCB SCREW	
64	XTW3+10F	SCREW	
65	XTW3+10Q	EJECT LEVER SCREW	
66	XYN3+F8FY	ROD ANTENNA SCREW	
67	RAE0113Z	TRAVERSE UNIT	
67-1	SHGD112	FLOATING RUBBER (A)	
67-2	SHGD113-1	FLOATING RUBBER (B)	

Ref No.	Part No.	Part Name & Description	Remarks
67-3	XQS2+A35FZ	SCREW	
68	RME0109	FLOATING SPRING A	
69	RME0142	FLOATING SPRING B	
70	RMS0123-1	FIXED PIN A	
71	RMS0350	FIXED PIN B	
72	RMR0698-K	TRAVERSE CHASSIS	
73	XTV2+6G	SCREW	
		INTEGRATED CIRCUITS	
IC1	AN7273A	IC, AMP	
IC2	RVIBA1332L	IC, FM MPX	
IC3	LM7001	IC, PLL	
IC301	S81250PG-T	IC, 5V REGULATOR	[M]
IC302	BA3932	IC, REGULATOR	
IC303	M51131L-702	IC, VCA	
IC304	TC4052BP	IC, ANALOG SW	[M]
IC305	TA8205AH	IC, POWER AMP. (LOW)	
IC306	BA5414	IC, POWER AMP (HIGH)	[M]
IC601	M51167AFP	IC, REC-PLAY	
IC602	BA7755A	IC, ANALOG SW	
IC605	M50253P	IC, I/O EXPANDER	
IC701	BA3822LS-M	IC, EQUALIZER	[M]
IC801	UPD78064G031	IC, MICON	[M]
IC802	S8053HNB-T	IC, RESET	
IC951	DN6851ALB	IC, HALL	
IC971	DN6851ALB	IC, HALL	
		IC PROTECTOR	
ICP3	SRUN15T	IC PROTECTOR	⚠
		TRANSISTORS	
Q1	2SK544F-AC	TRANSISTOR	
Q2	2SC2786MTA	TRANSISTOR	
Q3	2SC2786MTA	TRANSISTOR	
Q4	2SC2786MTA	TRANSISTOR	
Q5	2SC829BTA	TRANSISTOR	
Q6	2SA564STA	TRANSISTOR	[M]
Q7	2SA564STA	TRANSISTOR	[M]
Q8	2SA564STA	TRANSISTOR	[M]
Q9	2SA564RTA	TRANSISTOR	
Q10	2SA564RTA	TRANSISTOR	
Q11	2SA564RTA	TRANSISTOR	
Q12	BN1L3NTA	TRANSISTOR	[M]
Q13	BN1L3NTA	TRANSISTOR	[M]
Q14	BN1L3NTA	TRANSISTOR	[M]

Ref No.	Part No.	Part Name & Description	Remarks
Q15	2SC829CTA	TRANSISTOR	
Q16	2SA564RTA	TRANSISTOR	
Q17	2SC2785FTA	TRANSISTOR	
Q18	2SC2784FTA	TRANSISTOR	[M]
Q19	2SC2784FTA	TRANSISTOR	[M]
Q20	2SC2784FTA	TRANSISTOR	[M]
Q21	2SC2784FTA	TRANSISTOR	[M]
Q22	2SC829CTA	TRANSISTOR	
Q101	2SC2785FTA	TRANSISTOR	
Q131	2SC2785FTA	TRANSISTOR	
Q132	2SJ40CDTA	TRANSISTOR	
Q133	BA1L4MTA	TRANSISTOR	[M]
Q134	2SC1684HRTA	TRANSISTOR	
Q135	2SD1020HTA	TRANSISTOR	[M]
Q136	2SC1684STA	TRANSISTOR	
Q201	2SC2785FTA	TRANSISTOR	
Q231	2SC2785FTA	TRANSISTOR	
Q232	2SJ40CDTA	TRANSISTOR	
Q233	BA1L4MTA	TRANSISTOR	[M]
Q234	2SC1684HRTA	TRANSISTOR	
Q235	2SD1020HTA	TRANSISTOR	[M]
Q236	2SC1684STA	TRANSISTOR	
Q303	2SC2785FTA	TRANSISTOR	
Q304	2SC2785FTA	TRANSISTOR	
Q305	BN1L3NTA	TRANSISTOR	[M]
Q306	BN1L3NTA	TRANSISTOR	[M]
Q307	BA1L4MTA	TRANSISTOR	[M]
Q308	2SC2785FTA	TRANSISTOR	
Q309	BA1L4MTA	TRANSISTOR	[M]
Q310	2SC1684HRTA	TRANSISTOR	
Q311	2SC2785FTA	TRANSISTOR	
Q312	2SD1020HTA	TRANSISTOR	[M]
Q313	2SD1020HTA	TRANSISTOR	[M]
Q314	2SC1684HRTA	TRANSISTOR	
Q401	2SJ40CDTA	TRANSISTOR	
Q402	2SJ40CDTA	TRANSISTOR	
Q403	RVTDTC144TST	TRANSISTOR	
Q404	RVTDTC144TST	TRANSISTOR	
Q408	2SJ40CDTA	TRANSISTOR	
Q411	RVTDTC144TST	TRANSISTOR	
Q501	2SJ40CDTA	TRANSISTOR	
Q502	2SJ40CDTA	TRANSISTOR	
Q503	RVTDTC144TST	TRANSISTOR	
Q504	RVTDTC144TST	TRANSISTOR	
Q508	2SJ40CDTA	TRANSISTOR	
Q511	RVTDTC144TST	TRANSISTOR	
Q601	2SC2784FTA	TRANSISTOR	[M]
Q603	2SD1302STA	TRANSISTOR	

Ref No.	Part No.	Part Name & Description	Remarks
Q605	BA1L4ZTA	TRANSISTOR	[M]
Q606	2SC2785FTA	TRANSISTOR	
Q607	2SD1302STA	TRANSISTOR	
Q608	2SD1302STA	TRANSISTOR	
Q609	2SD965RTA	TRANSISTOR	
Q610	2SK301QTA	TRANSISTOR	[M]
Q611	2SD965RTA	TRANSISTOR	
Q612	RVTDTC144TST	TRANSISTOR	
Q613	2SB621RTA	TRANSISTOR	
Q614	2SB621RTA	TRANSISTOR	
Q615	RVTDTC143TST	TRANSISTOR	
Q616	RVTDTC143TST	TRANSISTOR	
Q618	2SK301QTA	TRANSISTOR	[M]
Q619	RVTDTA143XST	TRANSISTOR	
Q620	RVTDTA143XST	TRANSISTOR	
Q621	RVTDTA143XST	TRANSISTOR	
Q701	BA1A4MTA	TRANSISTOR	[M]
Q801	2SC2001KTA	TRANSISTOR	
Q803	2SC2785FTA	TRANSISTOR	
Q804	2SC2785FTA	TRANSISTOR	
Q805	2SC2785FTA	TRANSISTOR	
Q806	2SC2785FTA	TRANSISTOR	
Q807	2SA564RTA	TRANSISTOR	
Q808	BA1L4MTA	TRANSISTOR	[M]
		DIODES	
D1	1SV147T4MATU	DIODE	
D2	1SV147T4MATU	DIODE	
D3	1SV147T4MATU	DIODE	
D4	RVDSVC321	DIODE	
D5	RVDSVC321	DIODE	
D6	RVDSVC321	DIODE	
D7	RVDSVC321	DIODE	
D8	RVDSVC321	DIODE	
D9	RVDSVC321	DIODE	
D10	RVD1SS133TA	DIODE	
D11	RVD1SS133TA	DIODE	
D12	RVDMTZ5R6BTA	DIODE	
D13	RVD1SS133TA	DIODE	
D14	RVD1SS133TA	DIODE	
D15	RVD1SS133TA	DIODE	
D16	RVD1SS133TA	DIODE	
D17	RVD1SS133TA	DIODE	
D18	RVD1SS133TA	DIODE	
D19	RVD1SS135TA	DIODE	
D20	RVD1SS133TA	DIODE	
D301	RVD1SS133TA	DIODE	

Ref No.	Part No.	Part Name & Description	Remarks
D302	RVDMTZ11BTA	DIODE	
D304	RVD1SS133TA	DIODE	
D305	RVDMTZ6R8BTA	DIODE	
D306	RVD1SS133TA	DIODE	
D307	RVD1SS133TA	DIODE	
D308	MTZJ5R1BTA	DIODE	
D309	RVD1SS133TA	DIODE	
D310	RVD1SS133TA	DIODE	
D311	RVDMTZ11BTA	DIODE	
D312	RVD1SS133TA	DIODE	
D313	RVD1SS133TA	DIODE	
D314	RVD1SS133TA	DIODE	
D315	RVD1SS133TA	DIODE	
D601	RVD1SS133TA	DIODE	
D602	RVDMTZ4R7BTA	DIODE	
D603	RVD1SS133TA	DIODE	
D604	RVD1SS133TA	DIODE	
D702	SLR33VC160	DIODE	[M]
D801	RVD1SS133TA	DIODE	
D802	RVD1SS133TA	DIODE	
D803	RVD1SS133TA	DIODE	
D804	RVD1SS133TA	DIODE	
D805	RVD1SS133TA	DIODE	
D806	RVD1SS133TA	DIODE	
D807	LN083493P	DIODE	[M]
D809	RVD1SS133TA	DIODE	
D810	RVD1SS133TA	DIODE	
D901	1N5402BM21	DIODE	⚠
D902	1N5402BM21	DIODE	⚠
D903	1N5402BM21	DIODE	⚠
D904	1N5402BM21	DIODE	⚠
D905	RVD1SS133TA	DIODE	
D951	RVD1SS133TA	DIODE	
D971	RVD1SS133TA	DIODE	
		VARIABLE RESISTORS	
VR1	EVNDXAA00B14	VR, TUNER	
VR601	RVNCC14B1T-A	VR, TAPE SPEED	
VR602	RVNCC24B1T-A	VR, TAPE SPEED	
VR603	RVNCC73B1T-A	VR, TAPE SPEED	
VR701	EWC2UAF2054D	VR, XBS	[M]
VR702	EWAJQBV05G54	VR, EQ SLIDE	[M]
VR703	EWAJQBV05G54	VR, EQ SLIDE	[M]
VR704	EWAJQBV05G54	VR, EQ SLIDE	[M]
VR705	EWAJQBV05G54	VR, EQ SLIDE	[M]
VR706	EWAJUBV05G15	VR, BALANCE	[M]
VR707	EVQWQAF1524B	VR, VOLUME	[M]

Ref No.	Part No.	Part Name & Description	Remarks
		TRIMMERS	
CT3	RCV10AF1T-S	TRIMMER CAPACITOR	
CT4	ECRLA010A53R	TRIMMER CAPACITOR	
		SWITCHES	
S701	EVQ21405R	SW, TIMER	
S702	EVQ21405R	SW, TIME CHECK	
S703	EVQ21405R	SW, +(TUNING/TIME)	
S704	EVQ21405R	SW, -(TUNING/TIME)	
S705	EVQ21405R	SW, MEMORY/ADJUST	
S706	EVQ21405R	SW, FM MODE/B.P.	
S707	EVQ21405R	SW, +(PRESET TUNING)	
S708	EVQ21405R	SW, -(PRESET TUNING)	
S711	EVQ21405R	SW, CD STOP	
S712	EVQ21405R	SW, CD PLAY/PAUSE	
S713	EVQ21405R	SW, REV SKIP	
S714	EVQ21405R	SW, FWD SKIP	
S715	EVQ21405R	SW, BAND	
S731	EVQ21405R	SW, SLEEP	
S732	EVQ21405R	SW, POWER	
S801	RSH1A012-U	SW, CD OPEN/CLOSE	
S802	RSH1A012-U	SW, CD LOAD	
S881	EVQ21405R	SW, REC PAUSE	
S882	EVQ21405R	SW, AUTO CD RECORD	
S891	EVQ21405R	SW, CASS STOP	
S892	EVQ21405R	SW, CASS FF/TPS	
S893	EVQ21405R	SW, CASS FWD PLAY	
S894	EVQ21405R	SW, CASS REV PLAY	
S895	EVQ21405R	SW, CASS REW/TPS	
S896	EVQ21405R	SW, DECK 1/2	
S897	EVQ21405R	SW, COUNTER RESET	
S898	EVQ21405R	SW, REV MODE	
S899	EVQ21405R	SW, TAPE EDIT	
S901	RJJ1SE01-H	SW, AC (JK901)	⚠
S951	RSH1A89ZD-U	SW, MODE DETECT (1)	
S952	RSH1A90YD-U	SW, TAPE DETECT (1)	
S953	RSH1A90YD-U	SW, CrO2 DETECT (1)	
S971	RSH1A89ZD-U	SW, MODE DETECT (2)	
S972	RSH1A90YD-U	SW, TAPE DETECT (2)	
S973	RSH1A90YD-U	SW, TAP DETECT (2)	
S974	RSH1A90YD-U	SW, TAP DETECT (2)	
S975	RSH1A90YD-U	SW, CrO2 DETECT (2)	
SW901	RSR3A01ZA-H	SW, VOLTAGE SELECTOR	⚠

Ref No.	Part No.	Part Name & Description	Remarks
		CONNECTORS	
CN1	SJT3711	7P CONNECTOR	
CN2	SJT3909	9P CONNECTOR	
CN304	RJS1A6821	FFC 21P CONNECTOR	
CN701	RJP10G18ZA	10P CONNECTOR	
CN703	RJT003K010M1	10P B/B CONNECTOR	
CN705	RJS1A5203	3P CONNECTOR	
CN803	RJS1A6823	23 PIN VERT. FPC CONNECTOR	
CN804	RJS1A6721	21 PIN HOR. FFC CONNECTOR	[M]
CP101	RJP3G1ZA	PLUG	
CP601	RJP5G18ZA	5P CONNECTOR	
CP602	RJP4G18ZA	4P CONNECTOR	
CP607	RJP10G18ZA	10P CONNECTOR	
CP609	RJP9G18ZA	9P CONNECTOR	
CP703	RJU003K010M1	10P B/B CONNECTOR	
CP901	RJP4G4YA	4 PIN CONNECTOR	
		COILS & TRANSFORMERS	
L2	RLA4Y001-E	FM ANT COIL	[M]
L3	RLA4Y002-E	FM ANT COIL	[M]
L4	RLQZP1R2JT-Y	CHOKE COIL	[M]
L6	RLQY30S1W	RF-CHOKE COIL	[M]
L7	RLV5C002-0	F. ANT	[M]
L8	RL03B96-M	SW2 OSC COIL	
L9	RL02B126-M	MW OSC COIL	[M]
L10	RL03B97-M	SW1 OSC COIL	
L11	RL03B96-M	SW2 OSC COIL	
L15	RLQZP101KT-Y	CHOKE COIL	
L17	RLQZP100KT-Y	CHOKE COIL	
L301	RLQZP221KT-Y	TUBULAR COIL	
L302	RLQZP221KT-Y	TUBULAR COIL	
L303	RL09B007-M	D-D COIL	
L304	RLQZP221KT-Y	TUBULAR COIL	
L305	RLQZB4R7KT-D	CHOKE COIL	[M]
L601	RL08C002M-T	COIL	
L602	RLQZB470KT-D	COIL	
L603	RLQZB4R7KT-D	COIL	[M]
L731	RLQZP101KT-Y	TUBULAR COIL	
L732	RLQZP101KT-Y	TUBULAR COIL	
L733	RLQZP101KT-Y	TUBULAR COIL	
L734	RLQZP101KT-Y	TUBULAR COIL	
L735	RLQZP101KT-Y	TUBULAR COIL	
L803	RLQZP2R2KT-Y	CHOKE COIL	
L804	RLQZP2R2KT-Y	CHOKE COIL	
L806	RLQZPR47KT-Y	CHOKE COIL	
L808	RLQZP2R2KT-Y	CHOKE COIL	

Ref No.	Part No.	Part Name & Description	Remarks
L810	RLQZP100KT-Y	CHOKE COIL	
L811	RLQZP2R2KT-Y	CHOKE COIL	
L812	RLQZP2R2KT-Y	CHOKE COIL	
L813	RLQZP2R2KT-Y	CHOKE COIL	
L816	RLQZP2R2KT-Y	CHOKE COIL	
L817	RLQZP2R2KT-Y	CHOKE COIL	
L818	RLQZP100KT-Y	CHOKE COIL	
L819	RLQZP2R2KT-Y	CHOKE COIL	
L820	RLQZP100KT-Y	CHOKE COIL	
T1	RLI4B153-M	FM IFT	
T2	RLI2B153-M	AM IFT	
T3	SLI4B524-Z	FM DET COIL	
T901	RTP1M1E002-X	POWER TRANSFORMER	[M]⚠
-			
		COMPONENT COMBINATION	
Z601	EXBF6L306SYV	BLOCK COMPONENTS	
Z602	EXBF6L306SYV	BLOCK COMPONENTS	
Z603	EXBF6L306SYV	BLOCK COMPONENTS	
Z701	RCDGP1U58XD	REMOTE CONTROL	
Z801	RSL5128-L	LCD	[M]
		CERAMIC FILTERS	
CF1	RLFFETWNA01L	FM CF	
CF2	RVFSFZ450HL3	AM CF	[M]
		OSCILLATORS	
X1	SVQ49U722T-S	XTAL 7.2MHZ	
X801	RSXD32K7L01	32.768KHZ CRYSTAL	[M]
X802	RSXZ4M19M01T	4.19MHZ CERALOCK	
		FUSE	
F901	XBA2C63TB0	FUSE	⚠
		FUSE HOLDERS	
FH901	EYF52BC	FUSE HOLDER	
FH902	EYF52BC	FUSE HOLDER	
		JACKS	
JK301	RJF1098YA-H	JK, SPEAKER	[M]
JK302	RJF1098YA-H	JK, SPEAKER	[M]
JK303	RJJ39T01	JK, HEAD PHONE	
JK304	RJJ1D25ZA-C	JK, MIC	

Ref No.	Part No.	Part Name & Description	Remarks
JK901	RJJ1SE01-H	JK, AC (S901)	⚠
JK902	RJJB3ZD-C	JK, DC-IN	⚠
		WIRES	
W1	REXX0058-1	WIRE, MAIN TO TUNER	[M]
W2	REX0301	WIRE, CTRL TO TUNER	[M]
W607	REXX0105	WIRE, MAIN TO DECK	[M]
W801	REXX0102	WIRE, CTRL TO PANEL	[M]
W809	REX0304Y	WIRE,CONTROL TO DECK	[M]
W901	REXX0104	WIRE, MAIN TO POWER	[M]
		PACKING MATERIALS	
P1	RPGX0196	GIFT BOX	[M]
P2	RPHX0007-1	MIRAMAT SHEET	[M]
P3	RPNX0044	POLYFOAM	[M]
P4	SJP5213-2	AC PLUG ADAPTOR	
		ACCESSORIES	
A1	RQT2848-G	INSTRUCTION MANUAL	[M]
A2	RJA0019-2K	AC CORD	(SF)⚠
A3	EUR643820	REMOTE CONTROL UNIT	[M]
		< SERVO >	
		INTEGRATED CIRCUITS	
IC701	AN8802SCE1V	IC, HEAD AMP	
IC702	MN66271RA	IC, DIGITAL LSI	
IC703	AN8389SE1	IC, 4-CH DRIVER	
		TRANSISTOR	
Q701	2SB709S	TRANSISTOR	
		SWITCH	
S701	RSM0006-P	SW, RESET	
		CONNECTORS	
CN701	RJU035T016-1	16 PIN FFC CONNECTOR	
CN702	RJS1A6723-1Q	23 PIN FFC CONNCETOR	
		OSCILLATOR	
X701	RSXZ16M9M02T	CERAMIC OSC	

■ Resistors & Capacitors

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
* Capacitor values are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
* [M] Indicates in the values & remarks column indicates parts supplied by **MESA**.

Ref. No.	Part No.	Values & Remarks
	RESISTORS	
R1	ERDS2TJ472T	4.7K 1/4W
R2	ERDS2TJ122T	1.2K 1/4W
R3	ERDS2TJ104T	100K 1/4W
R4	ERDS2TJ104T	100K 1/4W
R5	ERDS2TJ470T	47 1/4W
R7	ERDS2TJ332T	3.3K 1/4W
R8	ERDS2TJ104T	100K 1/4W
R9	ERDS2TJ103T	10K 1/4W
R10	ERDS2TJ683T	68K 1/4W
R11	ERDS2TJ471T	470 1/4W
R12	ERDS2TJ224T	220K 1/4W
R13	ERDS2TJ471T	470 1/4W
R14	ERDS2TJ473T	47K 1/4W
R16	ERDS2TJ101T	100 1/4W
R17	ERDS2TJ332T	3.3K 1/4W
R18	ERDS2TJ334T	330K 1/4W
R19	ERDS2TJ331T	330 1/4W
R20	ERDS2TJ331T	330 1/4W
R21	ERDS2TJ331T	330 1/4W
R22	ERDS2TJ103T	10K 1/4W
R23	ERDS2TJ151T	150 1/4W
R24	ERDS2TJ562T	5.6K 1/4W
R25	ERDS2TJ332T	3.3K 1/4W
R26	ERDS2TJ102T	1K 1/4W
R27	ERDS2TJ104T	100K 1/4W
R28	ERDS2TJ562T	5.6K 1/4W
R29	ERDS2TJ681T	680 1/4W
R30	ERDS2TJ683T	68K 1/4W
R31	ERDS2TJ102T	1K 1/4W
R32	ERDS2TJ682T	6.8K 1/4W
R33	ERDS2TJ104T	100K 1/4W
R34	ERDS2TJ104T	100K 1/4W
R35	ERDS2TJ104T	100K 1/4W
R36	ERDS2TJ103T	10K 1/4W
R37	ERDS2TJ103T	10K 1/4W
R38	ERDS2TJ103T	10K 1/4W
R39	ERDS2TJ104T	100K 1/4W
R40	ERDS2TJ104T	100K 1/4W
R41	ERDS2TJ104T	100K 1/4W
R44	ERDS2TJ103T	10K 1/4W
R45	ERDS2TJ471T	470 1/4W
R47	ERDS2TJ103T	10K 1/4W
R48	ERDS2TJ103T	10K 1/4W

Ref. No.	Part No.	Values & Remarks
R49	ERDS2TJ121T	120 1/4W
R50	ERDS2TJ122T	1.2K 1/4W
R51	ERDS2TJ222T	2.2K 1/4W
R52	ERDS2TJ471T	470 1/4W
R53	ERDS2TJ224T	220K 1/4W
R54	ERDS2TJ153T	15K 1/4W
R55	ERDS2TJ561T	560 1/4W
R56	ERDS2TJ222T	2.2K 1/4W
R57	ERDS2TJ472T	4.7K 1/4W
R58	ERDS2TJ103T	10K 1/4W
R59	ERDS2TJ222T	2.2K 1/4W
R61	ERDS2TJ222T	2.2K 1/4W
R62	ERDS2TJ473T	47K 1/4W
R63	ERDS2TJ102T	1K 1/4W
R65	ERDS2TJ473T	47K 1/4W
R66	ERDS2TJ103T	10K 1/4W
R67	ERDS2TJ102T	1K 1/4W
R68	ERDS2TJ391T	390 1/4W
R69	ERDS2TJ103T	10K 1/4W
R70	ERDS2TJ103T	10K 1/4W
R71	ERDS2TJ103T	10K 1/4W
R72	ERDS2TJ104T	100K 1/4W
R73	ERDS2TJ103T	10K 1/4W
R74	ERDS2TJ224T	220K 1/4W
R75	ERDS2TJ224T	220K 1/4W
R76	ERDS2TJ224T	220K 1/4W
R81	ERDS2TJ102T	1K 1/4W
R82	ERDS2TJ103T	10K 1/4W
R84	ERDS2TJ104T	100K 1/4W
R85	ERDS2TJ471T	470 1/4W
R86	ERDS2TJ473T	47K 1/4W
R101	ERDS2TJ562T	5.6K 1/4W
R102	ERDS2TJ561T	560 1/4W
R103	ERDS2TJ222T	2.2K 1/4W
R104	ERDS2TJ101T	100 1/4W
R105	ERDS2TJ105T	1M 1/4W
R106	ERDS2TJ102T	1K 1/4W
R107	ERDS2TJ472T	4.7K 1/4W
R112	ERDS2TJ332T	3.3K 1/4W
R132	ERDS2TJ334T	330K 1/4W
R133	ERDS2TJ123T	12K 1/4W
R134	ERDS2TJ472T	4.7K 1/4W
R135	ERDS2TJ273T	27K 1/4W
R136	ERDS2TJ392T	3.9K 1/4W
R137	ERDS2TJ102T	1K 1/4W
R141	ERDS2TJ273T	27K 1/4W

Ref. No.	Part No.	Values & Remarks
R142	ERDS2TJ563T	56K 1/4W
R143	ERDS2TJ153T	15K 1/4W
R144	ERDS2TJ683T	68K 1/4W
R145	ERDS2TJ183T	18K 1/4W
R146	ERDS2TJ103T	10K 1/4W
R149	ERDS2TJ123T	12K 1/4W
R150	ERDS2TJ472T	4.7K 1/4W
R151	ERDS2TJ223T	22K 1/4W
R153	ERDS2TJ182T	1.8K 1/4W
R154	ERDS2TJ1R5T	1.5 1/4W
R155	ERDS2TJ1R5T	1.5 1/4W
R156	ERDS2TJ151T	150 1/4W
R157	ERDS2TJ182T	1.8K 1/4W
R158	ERDS2TJ332T	3.3K 1/4W
R159	ERDS2TJ124T	120K 1/4W
R160	ERDS2TJ271T	270 1/4W
R161	ERDS2TJ472T	4.7K 1/4W
R163	ERDS2TJ564T	560K 1/4W
R164	ERDS2TJ151T	150 1/4W
R165	ERDS2TJ391T	390 1/4W
R167	ERDS2TJ101T	100 1/4W
R168	ERDS2TJ273T	27K 1/4W
R201	ERDS2TJ562T	5.6K 1/4W
R202	ERDS2TJ561T	560 1/4W
R203	ERDS2TJ222T	2.2K 1/4W
R204	ERDS2TJ101T	100 1/4W
R205	ERDS2TJ105T	1M 1/4W
R206	ERDS2TJ102T	1K 1/4W
R207	ERDS2TJ472T	4.7K 1/4W
R212	ERDS2TJ332T	3.3K 1/4W
R232	ERDS2TJ334T	330K 1/4W
R233	ERDS2TJ123T	12K 1/4W
R234	ERDS2TJ472T	4.7K 1/4W
R235	ERDS2TJ273T	27K 1/4W
R236	ERDS2TJ392T	3.9K 1/4W
R237	ERDS2TJ102T	1K 1/4W
R241	ERDS2TJ273T	27K 1/4W
R242	ERDS2TJ563T	56K 1/4W
R243	ERDS2TJ153T	15K 1/4W
R244	ERDS2TJ683T	68K 1/4W
R245	ERDS2TJ183T	18K 1/4W
R246	ERDS2TJ103T	10K 1/4W
R249	ERDS2TJ123T	12K 1/4W
R250	ERDS2TJ472T	4.7K 1/4W
R251	ERDS2TJ223T	22K 1/4W
R253	ERDS2TJ182T	1.8K 1/4W

Ref. No.	Part No.	Values & Remarks	
R254	ERDS2TJ1R5T	1.5	1/4W
R255	ERDS2TJ1R5T	1.5	1/4W
R256	ERDS2TJ151T	150	1/4W
R257	ERDS2TJ182T	1.8K	1/4W
R258	ERDS2TJ332T	3.3K	1/4W
R259	ERDS2TJ124T	120K	1/4W
R260	ERDS2TJ271T	270	1/4W
R261	ERDS2TJ472T	4.7K	1/4W
R263	ERDS2TJ564T	560K	1/4W
R264	ERDS2TJ151T	150	1/4W
R265	ERDS2TJ391T	390	1/4W
R267	ERDS2TJ101T	100	1/4W
R268	ERDS2TJ273T	27K	1/4W
R303	ERDS2TJ474T	470K	1/4W
R304	ERDS2TJ474T	470K	1/4W
R305	ERDS2TJ2R7T	2.7	1/4W
R307	ERDS2TJ471T	470	1/4W
R308	ERDS2TJ472T	4.7K	1/4W
R309	ERDS2TJ471T	470	1/4W
R310	ERDS2TJ104T	100K	1/4W
R311	ERDS2TJ473T	47K	1/4W
R312	ERDS2TJ222T	2.2K	1/4W
R313	ERDS2TJ223T	22K	1/4W
R314	ERDS2TJ1R5T	1.5	1/4W
R315	ERDS2TJ332T	3.3K	1/4W
R316	ERDS2TJ221T	220	1/4W
R317	ERDS2TJ2R7T	2.7	1/4W
R318	ERDS2TJ103T	10K	1/4W
R319	ERDS2TJ183T	18K	1/4W
R320	ERDS2TJ273T	27K	1/4W
R321	ERDS2TJ102T	1K	1/4W
R322	ERDS2TJ153T	15K	1/4W
R323	ERDS2TJ332T	3.3K	1/4W
R324	ERDS2TJ682T	6.8K	1/4W
R325	ERDS2TJ683T	68K	1/4W
R326	ERDS2TJ103T	10K	1/4W
R327	ERDS2TJ183T	18K	1/4W
R328	ERDS2TJ472T	4.7K	1/4W
R329	ERDS2TJ101T	100	1/4W
R330	ERDS2TJ103T	10K	1/4W
R334	ERDS2TJ821T	820	1/4W
R335	ERDS2TJ471T	470	1/4W
R336	ERDS2TJ473T	47K	1/4W
R337	ERDS2TJ183T	18K	1/4W
R338	ERDS2TJ333T	33K	1/4W
R339	ERDS2TJ101T	100	1/4W
R340	ERDS2TJ332T	3.3K	1/4W
R341	ERDS2TJ105T	1M	1/4W
R342	ERDS2TJ222T	2.2K	1/4W
R343	ERDS2TJ180T	18	1/4W
R345	ERDS2TJ222T	2.2K	1/4W
R346	ERDS2TJ101T	100	1/4W
R347	ERDS2TJ224T	220K	1/4W

Ref. No.	Part No.	Values & Remarks	
R348	ERDS2TJ102T	1K	1/4W
R349	ERDS2TJ102T	1K	1/4W
R350	ERDS2TJ2R7T	2.7	1/4W
R351	ERDS2TJ152T	1.5K	1/4W
R352	ERDS2TJ221T	220	1/4W
R353	ERDS2TJ103T	10K	1/4W
R354	ERDS2TJ105T	1M	1/4W
R370	ERDS2TJ102T	1K	1/4W
R402	ERDS2TJ153T	15K	1/4W
R403	ERDS2TJ102T	1K	1/4W
R405	ERDS2TJ300T	30	1/4W
R406	ERDS2TJ392T	3.9K	1/4W
R407	ERDS2TJ103T	10K	1/4W
R408	ERDS2TJ222T	2.2K	1/4W
R409	ERDS2TJ104T	100K	1/4W
R410	ERDS2TJ333T	33K	1/4W
R411	ERDS2TJ822T	8.2K	1/4W
R412	ERDS2TJ101T	100	1/4W
R415	ERDS2TJ474T	470K	1/4W
R416	ERDS2TJ154T	150K	1/4W
R420	ERDS2TJ822T	8.2K	1/4W
R424	ERDS2TJ104T	100K	1/4W
R428	ERDS2TJ152T	1.5K	1/4W
R430	ERDS2TJ562T	5.6K	1/4W
R502	ERDS2TJ153T	15K	1/4W
R503	ERDS2TJ102T	1K	1/4W
R505	ERDS2TJ330T	33	1/4W
R506	ERDS2TJ392T	3.9K	1/4W
R507	ERDS2TJ103T	10K	1/4W
R508	ERDS2TJ222T	2.2K	1/4W
R509	ERDS2TJ104T	100K	1/4W
R510	ERDS2TJ333T	33K	1/4W
R511	ERDS2TJ822T	8.2K	1/4W
R512	ERDS2TJ101T	100	1/4W
R515	ERDS2TJ474T	470K	1/4W
R516	ERDS2TJ154T	150K	1/4W
R520	ERDS2TJ822T	8.2K	1/4W
R524	ERDS2TJ104T	100K	1/4W
R528	ERDS2TJ152T	1.5K	1/4W
R530	ERDS2TJ562T	5.6K	1/4W
R601	ERDS2TJ334T	330K	1/4W
R602	ERDS2TJ102T	1K	1/4W
R603	ERDS2TJ103T	10K	1/4W
R605	ERDS2TJ102T	1K	1/4W
R606	ERDS2TJ103T	10K	1/4W
R608	ERDS2TJ103T	10K	1/4W
R609	ERDS2TJ1R2T	1.2	1/4W
R610	ERDS2TJ682T	6.8K	1/4W
R611	ERDS2TJ472T	4.7K	1/4W
R612	ERDS2TJ472T	4.7K	1/4W
R613	ERDS2TJ332T	3.3K	1/4W
R614	ERDS2TJ102T	1K	1/4W
R615	ERDS2TJ221T	220	1/4W

Ref. No.	Part No.	Values & Remarks	
R616	ERDS2TJ2R7T	2.7	1/4W
R617	ERDS2TJ562T	5.6K	1/4W
R618	ERDS2TJ153T	15K	1/4W
R619	ERDS2TJ183T	18K	1/4W
R620	ERDS2TJ334T	330K	1/4W
R621	ERDS2TJ221T	220	1/4W
R622	ERDS2TJ2R7T	2.7	1/4W
R623	ERDS2TJ123T	12K	1/4W
R625	ERDS2TJ123T	12K	1/4W
R626	ERDS2TJ272T	2.7K	1/4W
R627	ERDS2TJ334T	330K	1/4W
R628	ERDS2TJ123T	12K	1/4W
R629	ERDS1VJ680T	68	1/2W ⚠
R630	ERDS2TJ104T	100K	1/4W
R631	ERDS2TJ332T	3.3K	1/4W
R632	ERDS2TJ474T	470K	1/4W
R633	ERDS2TJ472T	4.7K	1/4W
R634	ERDS2TJ102T	1K	1/4W
R636	ERDS2TJ223T	22K	1/4W
R637	ERDS2TJ2R7T	2.7	1/4W
R639	ERDS2TJ2R7T	2.7	1/4W
R640	ERDS2TJ334T	330K	1/4W
R646	ERDS2TJ472T	4.7K	1/4W
R648	ERDS2TJ472T	4.7K	1/4W
R656	ERDS2TJ335T	3.3M	1/4W
R657	ERDS2TJ222T	2.2K	1/4W
R658	ERDS2TJ472T	4.7K	1/4W
R659	ERDS2TJ472T	4.7K	1/4W
R660	ERDS2TJ102T	1K	1/4W
R661	ERDS2TJ104T	100K	1/4W
R662	ERDS2TJ104T	100K	1/4W
R664	ERDS2TJ104T	100K	1/4W
R665	ERDS2TJ102T	1K	1/4W
R666	ERDS2TJ103T	10K	1/4W
R701	ERDS2TJ152T	1.5K	1/4W
R702	ERDS2TJ222T	2.2K	1/4W
R703	ERDS2TJ272T	2.7K	1/4W
R704	ERDS2TJ392T	3.9K	1/4W
R705	ERDS2TJ562T	5.6K	1/4W
R706	ERDS2TJ822T	8.2K	1/4W
R707	ERDS2TJ153T	15K	1/4W
R711	ERDS2TJ152T	1.5K	1/4W
R712	ERDS2TJ222T	2.2K	1/4W
R713	ERDS2TJ272T	2.7K	1/4W
R714	ERDS2TJ392T	3.9K	1/4W
R721	ERDS2TJ331T	330	1/4W
R722	ERDS2TJ221T	220	1/4W
R723	ERDS2TJ681T	680	1/4W
R724	ERDS2TJ331T	330	1/4W
R725	ERDS2TJ103T	10K	1/4W
R726	ERDS2TJ474T	470K	1/4W
R727	ERDS2TJ474T	470K	1/4W
R801	ERDS2TJ563T	56K	1/4W

Ref. No.	Part No.	Values & Remarks
R802	ERDS2TJ102T	1K 1/4W
R803	ERDS2TJ153T	15K 1/4W
R804	ERDS2TJ222T	2.2K 1/4W
R805	ERDS2TJ683T	68K 1/4W
R806	ERDS2TJ391T	390 1/4W
R807	ERDS2TJ561T	560 1/4W
R808	ERDS2TJ103T	10K 1/4W
R809	ERDS2TJ103T	10K 1/4W
R810	ERDS2TJ103T	10K 1/4W
R812	ERDS2TG562T	5.6K 1/4W
R813	ERDS2TJ394T	390K 1/4W
R814	ERDS2TJ474T	470K 1/4W
R815	ERDS2TJ102T	1K 1/4W
R816	ERDS2TJ103T	10K 1/4W
R817	ERDS2TJ333T	33K 1/4W
R818	ERDS2TJ222T	2.2K 1/4W
R819	ERDS2TJ222T	2.2K 1/4W
R820	ERDS2TJ153T	15K 1/4W
R821	ERDS2TJ153T	15K 1/4W
R822	ERDS2TJ153T	15K 1/4W
R823	ERDS2TJ102T	1K 1/4W
R824	ERDS2TJ102T	1K 1/4W
R825	ERDS2TJ102T	1K 1/4W
R826	ERDS2TJ393T	39K 1/4W
R827	ERDS2TJ104T	100K 1/4W
R828	ERDS2TJ104T	100K 1/4W
R829	ERDS2TJ104T	100K 1/4W
R830	ERDS2TJ106T	10M 1/4W
R831	ERDS2TJ334T	330K 1/4W
R832	ERDS2TJ681T	680 1/4W
R833	ERDS2TJ105T	1M 1/4W
R834	ERDS2TJ472T	4.7K 1/4W
R835	ERDS2TJ472T	4.7K 1/4W
R836	ERDS2TJ103T	10K 1/4W
R837	ERDS2TJ104T	100K 1/4W
R838	ERDS2TJ123T	12K 1/4W
R839	ERDS2TJ563T	56K 1/4W
R840	ERDS2TJ222T	2.2K 1/4W
R841	ERDS2TJ222T	2.2K 1/4W
R842	ERDS2TJ103T	10K 1/4W
R843	ERDS2TJ103T	10K 1/4W
R844	ERDS2TJ103T	10K 1/4W
R845	ERDS2TJ472T	4.7K 1/4W
R846	ERDS2TJ472T	4.7K 1/4W
R847	ERDS2TJ472T	4.7K 1/4W
R848	ERDS2TJ102T	1K 1/4W
R849	ERDS2TJ102T	1K 1/4W
R850	ERDS2TJ824T	820K 1/4W
R851	ERDS2TJ104T	100K 1/4W
R852	ERDS2TJ471T	470 1/4W
R853	ERDS2TJ822T	8.2K 1/4W
R854	ERDS2TJ333T	33K 1/4W
R855	ERDS2TJ104T	100K 1/4W

Ref. No.	Part No.	Values & Remarks
R856	ERDS2TJ104T	100K 1/4W
R858	ERDS2TJ222T	2.2K 1/4W
R859	ERDS2TJ470T	47 1/4W
R861	ERDS2TJ102T	1K 1/4W
R862	ERDS2TJ102T	1K 1/4W
R863	ERDS2TJ104T	100K 1/4W
R864	ERDS2TJ222T	2.2K 1/4W
R865	ERDS2TJ222T	2.2K 1/4W
R867	ERDS2TJ222T	2.2K 1/4W
R868	ERDS2TJ222T	2.2K 1/4W
R869	ERDS2TJ222T	2.2K 1/4W
R873	ERDS2TJ103T	10K 1/4W
R882	ERDS2TJ562T	5.6K 1/4W
R883	ERDS2TJ822T	8.2K 1/4W
R891	ERDS2TJ152T	1.5K 1/4W
R892	ERDS2TJ222T	2.2K 1/4W
R893	ERDS2TJ272T	2.7K 1/4W
R894	ERDS2TJ392T	3.9K 1/4W
R895	ERDS2TJ562T	5.6K 1/4W
R896	ERDS2TJ822T	8.2K 1/4W
R897	ERDS2TJ153T	15K 1/4W
R898	ERDS2TJ333T	33K 1/4W
R901	ERDS2TJ471T	470 1/4W
	CAPACITORS	
C1	ECBT1H102KB5	1000P 50V
C3	ECCR1H120KC5	12P 50V
C4	ECBT1H101KB5	100P 50V
C5	ECBT1H102KB5	1000P 50V
C6	ECBT1H102KB5	1000P 50V
C7	ECBT1H100JC5	10P 50V
C8	ECBT1H3R9KC5	3.9P 50V
C9	ECBT1H150JC5	15P 50V
C10	ECBT1H102KB5	1000P 50V
C11	ECBT1H3R3KC5	3.3P 50V
C12	ECBT1H2R2KC5	2.2P 50V
C13	ECBT1H181KB5	180P 50V
C14	ECBT1H100JC5	10P 50V
C15	ECBT1H102KB5	1000P 50V
C16	ECBT1H102KB5	1000P 50V
C17	ECBT1C103MS5	0.01 16V
C18	ECBT1C103MS5	0.01 16V
C19	ECBT1H102KB5	1000P 50V
C20	ECBT1H102KB5	1000P 50V
C21	ECBT1H821KB5	820P 50V
C22	ECBT1H181KB5	180P 50V
C23	ECBT1C103MS5	0.01 16V
C24	ECBT1H102KB5	1000P 50V
C25	ECEA1CU100B	10 16V
C26	ECBT1H102KB5	1000P 50V
C29	ECEA0JU101B	100 6.3V
C30	ECEA1EU4R7B	4.7 25V

Ref. No.	Part No.	Values & Remarks
C31	ECFR1C223MR	0.022 16V
C32	ECFR1C223MR	0.022 16V
C33	ECEA1AU101B	100 10V
C34	ECFR1C153MR	0.015 16V
C35	ECBT1C103MS5	0.01 16V
C36	ECEA1HU2R2B	2.2 50V
C37	ECBT1C103MS5	0.01 16V
C38	ECFR1C153MR	0.015 16V
C39	ECEA1HU010B	1 50V
C40	ECEA1HUR47B	0.47 50V
C41	ECEA1HUR47B	0.47 50V
C42	ECQP1102JZT	1000P 100V
C43	ECBT1H8R2KC5	8.2P 50V
C44	ECBT1C103MS5	0.01 16V
C45	ECBT1H330J5	33P 50V
C46	ECBT1H4R7KC5	4.7P 50V
C47	ECBT1C103MS5	0.01 16V
C49	ECBT1H330J5	33P 50V
C50	ECBT1C103MS5	0.01 16V
C51	ECBT1H102KB5	1000P 50V
C52	ECFR1C223MR	0.022 16V
C53	ECBT1H470J5	47P 50V
C54	ECBT1H6R8KC5	6.8P 50V
C55	ECCR1H080CC5	8P 50V
C56	ECQP1391JZT	390P 100V [M]
C57	ECBT1H102KB5	1000P 50V
C58	ECBT1H220JC5	22P 50V
C59	ECBT1H102KB5	1000P 50V
C60	ECQP2A222JZT	2200P 100V
C61	ECBT1H220JC5	22P 50V
C62	ECBT1H101KB5	100P 50V
C63	ECQP2A682JZT	6800P 100V
C64	ECFR1C223MR	0.022 16V
C65	ECBT1H100JC5	10P 50V
C66	ECBT1C103MS5	0.01 16V
C67	ECBT1C103MS5	0.01 16V
C68	ECEA1HU010B	1 50V
C69	ECEA1HUR47B	0.47 50V
C70	ECEA0JU101B	100 6.3V
C71	ECKR1H103MD5	0.01 50V
C72	ECBT1H101KB5	100P 50V
C73	ECKR1H103MD5	0.01 50V
C74	ECBT0J153MS5	0.015 6.3V
C75	ECEA1HU2R2B	2.2 50V
C76	ECBT1H102KB5	1000P 50V
C77	ECBT1H102KB5	1000P 50V
C78	ECEA1HNR47SB	0.47 50V
C79	ECBT1C103MS5	0.01 16V
C80	ECBT1H102KB5	1000P 50V
C81	ECBT1H102KB5	1000P 50V
C82	ECQV1H474JZ3	0.47 50V
C83	ECEA1CU330B	33 16V
C84	ECBT1C103MS5	0.01 16V

Ref. No.	Part No.	Values & Remarks
C86	ECBT1H150JC5	15P 50V
C87	ECBT1H150JC5	15P 50V
C88	ECBT1H331KB5	330P 50V
C89	ECCR1H331K5	330P 50V
C90	ECBT1H331KB5	330P 50V
C92	ECBT1H102KB5	1000P 50V
C93	ECEA1CU330B	33 16V
C94	ECBT1H102KB5	1000P 50V
C95	ECBT1C103MS5	0.01 16V
C96	ECEA1CU330B	33 16V
C97	ECBT1H102KB5	1000P 50V
C98	ECBT1H101KB5	100P 50V
C99	ECBT1H331KB5	330P 50V
C101	ECEA1HKA010B	1 50V
C102	ECBT1H471KB5	470P 50V
C103	ECEA1CKA100B	10 16V
C104	ECBT1H102KB5	1000P 50V
C105	ECFR1C333KR	0.033 16V
C106	ECBT1C332MR5	3300P 16V
C107	ECEA1HKA0R1B	0.1 50V
C108	ECBT1C103MS5	0.01 16V
C109	ECEA1HKAR33B	0.33 50V
C110	ECFR1C683MR	0.068 16V
C111	ECEA1HKA010B	1 50V
C112	ECFR1C273MR	0.027 16V
C113	ECEA1HKA010B	1 50V
C114	ECEA1HKA010B	1 50V
C115	ECBT1H102KB5	1000P 50V
C133	ECBT1C472KR5	4700P 16V
C134	ECEA1HKAR15B	0.15 50V
C135	ECEA1CKA100B	10 16V
C136	ECEA1HU4R7B	4.7 50V
C137	ECBT1H101KB5	100P 50V
C138	ECEA1HKA010B	1 50V
C139	ECBT1C332MR5	3300P 16V
C140	ECBT1C332MR5	3300P 16V
C141	ECBT1H101KB5	100P 50V
C143	ECFR1C473MR	0.047 16V
C144	ECEA1HU010B	1 50V
C145	ECEA1CU100B	10 16V
C146	ECQV1H154JZ3	0.15 50V
C147	ECQV1H154JZ3	0.15 50V
C148	ECEA1AU330B	33 10V
C149	ECBT1H102KB5	1000P 50V
C150	ECEA1CU101B	100 16V
C151	ECEA1CU330B	33 16V
C153	ECEA1AU101B	100 10V
C154	ECQV1H104JZ3	0.1 50V
C155	ECBT1H102KB5	1000P 50V
C156	ECEA1HKA010B	1 50V
C157	ECBT1H331KB5	330P 50V
C164	ECEA1HKA2R2B	2.2 50V
C201	ECEA1HKA010B	1 50V

Ref. No.	Part No.	Values & Remarks
C202	ECBT1H471KB5	470P 50V
C203	ECEA1CKA100B	10 16V
C204	ECBT1H102KB5	1000P 50V
C205	ECFR1C333KR	0.033 16V
C206	ECBT1C332MR5	3300P 16V
C207	ECEA1HKA0R1B	0.1 50V
C208	ECBT1C103MS5	0.01 16V
C209	ECEA1HKAR33B	0.33 50V
C210	ECFR1C683MR	0.068 16V
C211	ECEA1HKA010B	1 50V
C212	ECFR1C273MR	0.027 16V
C213	ECEA1HKA010B	1 50V
C214	ECEA1HKA010B	1 50V
C215	ECBT1H102KB5	1000P 50V
C233	ECBT1C472KR5	4700P 16V
C234	ECEA1HKAR15B	0.15 50V
C235	ECEA1CKA100B	10 16V
C236	ECEA1HU4R7B	4.7 50V
C237	ECBT1H101KB5	100P 50V
C238	ECEA1HKA010B	1 50V
C239	ECBT1C332MR5	3300P 16V
C240	ECBT1C332MR5	3300P 16V
C241	ECBT1H101KB5	100P 50V
C243	ECFR1C473MR	0.047 16V
C244	ECEA1HU010B	1 50V
C245	ECEA1CU100B	10 16V
C246	ECQV1H154JZ3	0.15 50V
C247	ECQV1H154JZ3	0.15 50V
C248	ECEA1AU330B	33 10V
C249	ECBT1H102KB5	1000P 50V
C250	ECEA1CU101B	100 16V
C251	ECEA1CU330B	33 16V
C253	ECEA1AU101B	100 10V
C254	ECQV1H104JZ3	0.1 50V
C255	ECBT1H102KB5	1000P 50V
C256	ECEA1HKA010B	1 50V
C257	ECBT1H331KB5	330P 50V
C264	ECEA1HKA2R2B	2.2 50V
C301	ECEA1CKA470B	47 16V
C302	ECEA1HKA010B	1 50V
C303	ECEA1HKA010B	1 50V
C304	ECBT1C103MS5	0.01 16V
C305	ECBT1H220JC5	22P 50V
C307	ECEA1CU470B	47 16V
C308	ECBT1C103MS5	0.01 16V
C309	ECBT1C103MS5	0.01 16V
C315	ECEA1HKA4R7B	4.7 50V
C316	ECEA1AU220B	22 10V
C317	ECEA1HKA4R7B	4.7 50V
C318	ECEA1AU221B	220 10V
C319	ECEA1AU221B	220 10V
C320	ECEA1AU101B	100 10V
C321	ECEA1AU221B	220 10V

Ref. No.	Part No.	Values & Remarks
C322	ECEA1CU100B	10 16V
C323	ECEA1CU100B	10 16V
C324	ECEA1CU100B	10 16V
C325	ECEA1AU101B	100 10V
C326	ECEA0JKA221B	220 6.3V
C327	ECEA1AU220B	22 10V
C328	ECEA1CU221B	220 16V
C336	ECEA1AU220B	22 10V
C338	ECEA1HKA010B	1 50V
C339	ECEA1AU101B	100 10V
C340	ECEA1HKA010B	1 50V
C341	ECBT1C103MS5	0.01 16V
C342	ECBT1H102KB5	1000P 50V
C344	ECBT1H471KB5	470P 50V
C346	ECA1EM332BV	3300 25V [M]
C347	ECA1EM332BV	3300 25V [M]
C348	ECBT1H471KB5	470P 50V
C349	ECEA1CU101B	100 16V
C350	ECEA1HKA4R7B	4.7 50V
C351	ECEA1AU221B	220 10V
C352	ECBT1H102KB5	1000P 50V
C353	ECEA1HU010B	1 50V
C354	ECEA1CU100B	10 16V
C356	ECEA1AU221B	220 10V
C357	ECEA1CU100B	10 16V
C358	ECEA1AU101B	100 10V
C359	ECEA1AU101B	100 10V
C360	ECBT1H102KB5	1000P 50V
C361	ECBT1H102KB5	1000P 50V
C362	ECFR1C473MR	0.047 16V
C363	ECEA1CU100B	10 16V
C370	ECBT1C103MS5	0.01 16V
C372	ECEA1AU101B	100 10V
C401	ECBT1H102KB5	1000P 50V
C404	ECQV1H333JZ3	0.033 50V
C405	ECBT1H471KB5	470P 50V
C406	ECBT1H331KB5	330P 50V
C407	ECFR1C183MR	0.018 16V
C408	ECEA1HKA010B	1 50V
C409	ECEA1EKA4R7B	4.7 25V
C410	ECEA1HKA010B	1 50V
C411	ECBT1H102KB5	1000P 50V
C412	ECFR1C473MR	0.047 16V
C413	ECEA1CKA100B	10 16V
C414	ECBT1C222MR5	2200P 16V
C415	ECBT1H102KB5	1000P 50V
C416	ECBT1H102KB5	1000P 50V
C417	ECEA1EKA4R7B	4.7 25V
C418	ECBT1H102KB5	1000P 50V
C419	ECBT0J223NS5	0.022 6.3V
C424	ECEA0JU221B	220 6.3V
C501	ECBT1H102KB5	1000P 50V
C504	ECQV1H333JZ3	0.033 50V

Ref. No.	Part No.	Values & Remarks
C505	ECBT1H471KB5	470P 50V
C506	ECBT1H331KB5	330P 50V
C507	ECFR1C183MR	0.018 16V
C508	ECEA1HKA010B	1 50V
C509	ECEA1EKA4R7B	4.7 25V
C510	ECEA1HKA010B	1 50V
C511	ECBT1H102KB5	1000P 50V
C512	ECFR1C473MR	0.047 16V
C513	ECEA1CKA100B	10 16V
C514	ECBT1C222MR5	2200P 16V
C515	ECBT1H102KB5	1000P 50V
C516	ECBT1H102KB5	1000P 50V
C517	ECEA1EKA4R7B	4.7 25V
C518	ECBT1H102KB5	1000P 50V
C519	ECBT0J223NS5	0.022 6.3V
C524	ECEA0JU221B	220 6.3V
C601	ECBT1C103MS5	0.01 16V
C602	ECQV1H474JZ3	0.47 50V
C603	ECQP1102JZT	1000P 100V
C606	ECQP2A392JZT	3900P 100V
C607	ECEA1EU4R7B	4.7 25V
C608	ECQV1H473JZ3	0.047 50V
C609	ECEA1AU101B	100 10V
C610	ECBT1H102KB5	1000P 50V
C611	ECBT1H102KB5	1000P 50V
C612	ECFR1C103KR	0.01 16V
C613	ECFR1C103KR	0.01 16V
C614	ECEA1EU101B	100 25V
C615	ECEA1AU330B	33 10V
C616	ECEA1AU101B	100 10V
C618	ECEA1CKA100B	10 16V
C619	ECEA1HKA0R1B	0.1 50V
C620	ECFR1C223MR	0.022 16V
C621	ECEA1HKA010B	1 50V
C622	ECEA1CU101B	100 16V
C623	ECBT1C103MS5	0.01 16V
C628	ECKF1H153MD	0.015 50V
C629	ECEA1EU4R7B	4.7 25V
C631	ECFR1C104MR	0.1 16V
C632	ECEA1AU330B	33 10V
C633	ECEA1HKA0R1B	0.1 50V
C635	ECEA1AU470B	47 10V
C636	ECBT1H681KB5	680P 50V
C637	ECBT1H681KB5	680P 50V
C711	ECBT1H102KB5	1000P 50V
C721	ECEA1CU471B	470 16V
C722	ECEA1AKA101B	100 10V
C725	ECBT1H102KB5	1000P 50V
C727	ECBT1H331KB5	330P 50V
C801	ECBT1H102KB5	1000P 50V
C802	ECBT1H102KB5	1000P 50V
C803	ECBT1H102KB5	1000P 50V
C804	ECBT1H331KB5	330P 50V

Ref. No.	Part No.	Values & Remarks
C805	ECBT1H221KB5	220P 50V
C806	ECBT1H331KB5	330P 50V
C807	ECBT1H331KB5	330P 50V
C808	ECBT1H102KB5	1000P 50V
C809	ECBT1H330J5	33P 50V
C810	ECBT1H102KB5	1000P 50V
C811	ECBT1H102KB5	1000P 50V
C812	ECEA1HKA010B	1 50V
C813	ECBT1C103MS5	0.01 16V
C814	ECBT1C103MS5	0.01 16V
C815	ECEA1HKA010B	1 50V
C817	ECEA0JKA221B	220 6.3V
C819	ECBT1C103MS5	0.01 16V
C824	ECEA1EKA4R7B	4.7 25V
C825	ECBT1H102KB5	1000P 50V
C826	ECBT1H102KB5	1000P 50V
C827	ECBT1H220JC5	22P 50V
C828	ECBT1H220JC5	22P 50V
C829	ECBT1H820KB5	82P 50V
C830	ECBT1H680J5	68P 50V
C831	ECBT1H102KB5	1000P 50V
C832	ECBT1H102KB5	1000P 50V
C833	ECBT1H680J5	68P 50V
C834	ECBT1H680J5	68P 50V
C835	ECBT1H102KB5	1000P 50V
C836	ECBT1H102KB5	1000P 50V
C837	ECBT1H102KB5	1000P 50V
C839	ECEA0JKA221B	220 6.3V
C840	ECEA0JKA221B	220 6.3V
C841	ECBT1H331KB5	330P 50V
C842	ECBT1H331KB5	330P 50V
C843	ECBT1H102KB5	1000P 50V
C846	ECBT1H331KB5	330P 50V
C847	ECBT1H331KB5	330P 50V
C848	ECBT1H331KB5	330P 50V
C849	ECBT1H331KB5	330P 50V
C852	ECBT1H331KB5	330P 50V
C854	ECBT1H101KB5	100P 50V
C855	ECBT1H331KB5	330P 50V
C856	ECBT1C103MS5	0.01 16V
C857	ECBT1C103MS5	0.01 16V
C860	ECBT1H331KB5	330P 50V
C861	ECBT1H331KB5	330P 50V
C862	ECBT1H101KB5	100P 50V
C891	ECBT1H561KB5	560P 50V
C901	ECKR1H103ZF5	0.01 50V ⚠
C902	ECKR1H103ZF5	0.01 50V ⚠
C903	ECKR1H103ZF5	0.01 50V ⚠
C904	ECKR1H103ZF5	0.01 50V ⚠
C951	ECBT1H101KB5	100P 50V
C971	ECBT1H101KB5	100P 50V

Ref. No.	Part No.	Values & Remarks
	< SERVO >	
	RESISTORS	
R701	ERJ6GEYJ100V	10 1/10W
R702	ERJ6GEYJ471V	470 1/10W
R703	ERJ6GEYJ823V	82K 1/10W
R704	ERJ6GEYJ102V	1K 1/10W
R705	ERJ6GEYJ103V	10K 1/10W
R706	ERJ6GEYJ102V	1K 1/10W
R707	ERJ6GEYJ473V	47K 1/10W
R708	ERJ6GEYJ104V	100K 1/10W
R709	ERJ6GEYJ683V	68K 1/10W
R711	ERJ6GEYJ154V	150K 1/10W
R712	ERJ6GEYJ221V	220 1/10W
R717	ERJ6GEYJ102V	1K 1/10W
R718	ERJ6GEYJ102V	1K 1/10W
R719	ERJ6GEYJ102V	1K 1/10W
R720	ERJ6GEYJ102V	1K 1/10W
R721	ERJ6GEYJ101V	100 1/10W
R722	ERJ6GEYJ563V	56K 1/10W
R723	ERJ6GEYJ182V	1.8K 1/10W
R724	ERJ6GEYJ333V	33K 1/10W
R725	ERJ6GEYJ472V	4.7K 1/10W
R726	ERJ6GEYJ473V	47K 1/10W
R727	ERJ6GEYJ103V	10K 1/10W
R728	ERJ6GEYJ392V	3.9K 1/10W
R730	ERJ6GEYJ331V	330 1/10W
R731	ERJ6GEYJ392V	3.9K 1/10W
R734	ERJ6GEYJ101V	100 1/10W
R735	ERJ6GEYJ101V	100 1/10W
R736	ERJ6GEYJ101V	100 1/10W
R738	ERJ6GEYJ223V	22K 1/10W
R739	ERJ6GEYJ681V	680 1/10W
R741	ERJ6GEYJ562V	5.6K 1/10W
R742	ERJ6GEYJ562V	5.6K 1/10W
R743	ERJ6GEYJ562V	5.6K 1/10W
R744	ERJ6GEYJ103V	10K 1/10W
R745	ERJ6GEYJ155V	1.5M 1/10W
R748	ERJ6GEYJ182V	1.8K 1/10W
R749	ERJ8GEYJ103V	10K 1/8W
	CAPACITORS	
C701	ECEA0JKA220I	22 6.3V
C702	ECEA1HKA010I	1 50V
C703	ECEA0JKA101I	100 6.3V
C704	ECUZ1E104MBN	0.1 25V
C705	ECEA1HKA010I	1 50V
C706	ECUV1H101JCN	100P 50V
C707	ECUV1E273KBN	0.027 25V
C708	ECUV1H472KBN	4700P 50V
C709	ECUV1C473KBN	0.047 16V
C710	ECUV1H152KBN	1500P 50V

Ref. No.	Part No.	Values & Remarks
C711	ECUZ1E104MBN	0.1 25V
C712	ECUZ1E104MBN	0.1 25V
C713	ECUV1C104MBM	0.1 16V
C714	ECEA0JKA101I	100 6.3V
C715	ECEA0JKA470I	47 6.3V
C716	ECUV1H561KBN	560P 50V
C717	ECUZ1E104MBN	0.1 25V
C718	ECUV1C224KBM	0.22 16V
C721	ECUV1H270JCN	27P 50V
C722	ECUV1H270JCN	27P 50V
C723	ECEA1AKA221I	220 10V
C724	ECUV1C104MBM	0.1 16V
C725	ECUV1H102KBN	1000P 50V
C726	ECUV1H102KBN	1000P 50V
C727	ECEA1HPK010I	1 50V
C728	ECEA1HPK010I	1 50V
C730	ECUZ1E104MBN	0.1 25V
C731	ECEA0JKA221I	220 6.3V
C732	ECEA0JKA221I	220 6.3V
C733	ECUZ1E104MBN	0.1 25V
C734	ECEA1AKA221I	220 10V
C735	ECUZ1E104MBN	0.1 25V
C736	ECUZ1E104MBN	0.1 25V
C737	ECUZ1E104MBN	0.1 25V
C738	ECUV1C154KBN	0.15 16V
C742	ECUV1E273KBN	0.027 25V
C743	ECUZ1E104MBN	0.1 25V
C744	ECUV1E822KBN	8200P 25V
C745	ECUV1C473MBN	0.047 16V
C746	ECUV1H050DCN	5P 50V
C747	ECUV1H222KBN	2200P 50V
C748	ECUV1H471KBM	470P 50V
	CLIPS JUMPERS	
RJ701	ERJ8GEY0R00A	0 1/10W
RJ702	ERJ8GEY0R00A	0 1/10W
RJ703	ERJ8GEY0R00A	0 1/10W
RJ704	ERJ8GEY0R00A	0 1/10W
RJ707	ERJ8GEY0R00A	0 1/10W
RJ708	ERJ8GEY0R00A	0 1/10W
RJ709	ERJ8GEY0R00A	0 1/10W
RJ714	ERJ8GEY0R00A	0 1/10W
RJ715	ERJ8GEY0R00A	0 1/10W
RJ716	ERJ8GEY0R00A	0 1/10W
RJ717	ERJ8GEY0R00A	0 1/10W
RJ721	ERJ6GEY0R00A	0 1/10W
RJ724	ERJ6GEY0R00A	0 1/10W
RJ725	ERJ6GEY0R00A	0 1/10W
RJ726	ERJ6GEY0R00A	0 1/10W
RJ799	ERJ6GEY0R00A	0 1/10W

Ref. No.	Part No.	Values & Remarks
	TEST JUMPERS	
TJ701	EYF8CU	TEST JUMPER
TJ702	EYF8CU	TEST JUMPER

Ref. No.	Part No.	Values & Remarks

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